



# NBS SPECIAL PUBLICATION 260-111

U.S. DEPARTMENT OF COMMERCE/National Bureau of Standards

*Standard Reference Materials:*  
**Compilation of Elemental Concentration  
Data for NBS Clinical, Biological,  
Geological, and Environmental  
Standard Reference Materials**

**E. S. Gladney, B. T. O'Malley, I. Roelandts, and T. E. Gills**

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The National Bureau of Standards<sup>1</sup> was established by an act of Congress on March 3, 1901. The Bureau's overall goal is to strengthen and advance the nation's science and technology and facilitate their effective application for public benefit. To this end, the Bureau conducts research to assure international competitiveness and leadership of U.S. industry, science and technology. NBS work involves development and transfer of measurements, standards and related science and technology, in support of continually improving U.S. productivity, product quality and reliability, innovation and underlying science and engineering. The Bureau's technical work is performed by the National Measurement Laboratory, the National Engineering Laboratory, the Institute for Computer Sciences and Technology, and the Institute for Materials Science and Engineering.

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*Standard Reference Materials:*

# Compilation of Elemental Concentration Data for NBS Clinical, Biological, Geological, and Environmental Standard Reference Materials

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E. S. Gladney<sup>1</sup>, B. T. O'Malley<sup>1</sup>, I. Roelandts<sup>2</sup>, and T. E. Gills<sup>3</sup>

1. Los Alamos National Laboratory  
Los Alamos, NM 87545
2. Universite de Liege  
Liege, Belgium
3. National Bureau of Standards  
Gaithersburg, Maryland 20899



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U.S. DEPARTMENT OF COMMERCE, C. William Verity, Secretary  
NATIONAL BUREAU OF STANDARDS, Ernest Ambler, Director

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## PREFACE

Standard Reference Materials (SRMs) as defined by the National Bureau of Standards are "well-characterized materials, produced in quantity, that calibrate a measurement system to assure compatibility of measurement in the Nation." SRMs are widely used as primary standards in many diverse fields of science, industry and technology, both within the United States and throughout the world. For many of the Nation's scientists and technologists it is of more than passing interest to know the measurements obtained and methods used by the analytical community when analyzing SRMs. An NBS series of papers, of which this publication is a member, is called the "NBS Special Publication - 260 Series" is reserved for this purpose.

This 260 Series is dedicated to the dissemination of elemental concentration data for NBS clinical, biological, geological, and environmental SRMs. More information will be found in this 260 than is generally found in NBS Certificates of Analysis. This 260 enables the user of these SRMs to assess the validity of data not available in the certificate of analysis. We hope that this 260 will provide sufficient additional information so that new application of these SRMs may be sought and found.

Inquiries concerning the technical content of this compilation should be directed to the authors. Other questions concerned with the availability, delivery, or price of specific SRMs should be addressed to:

•  
Office of Standard Reference Materials  
National Bureau of Standards  
Gaithersburg, MD 20899

Stanley D. Rasberry, Chief  
Office of Standard Reference Materials

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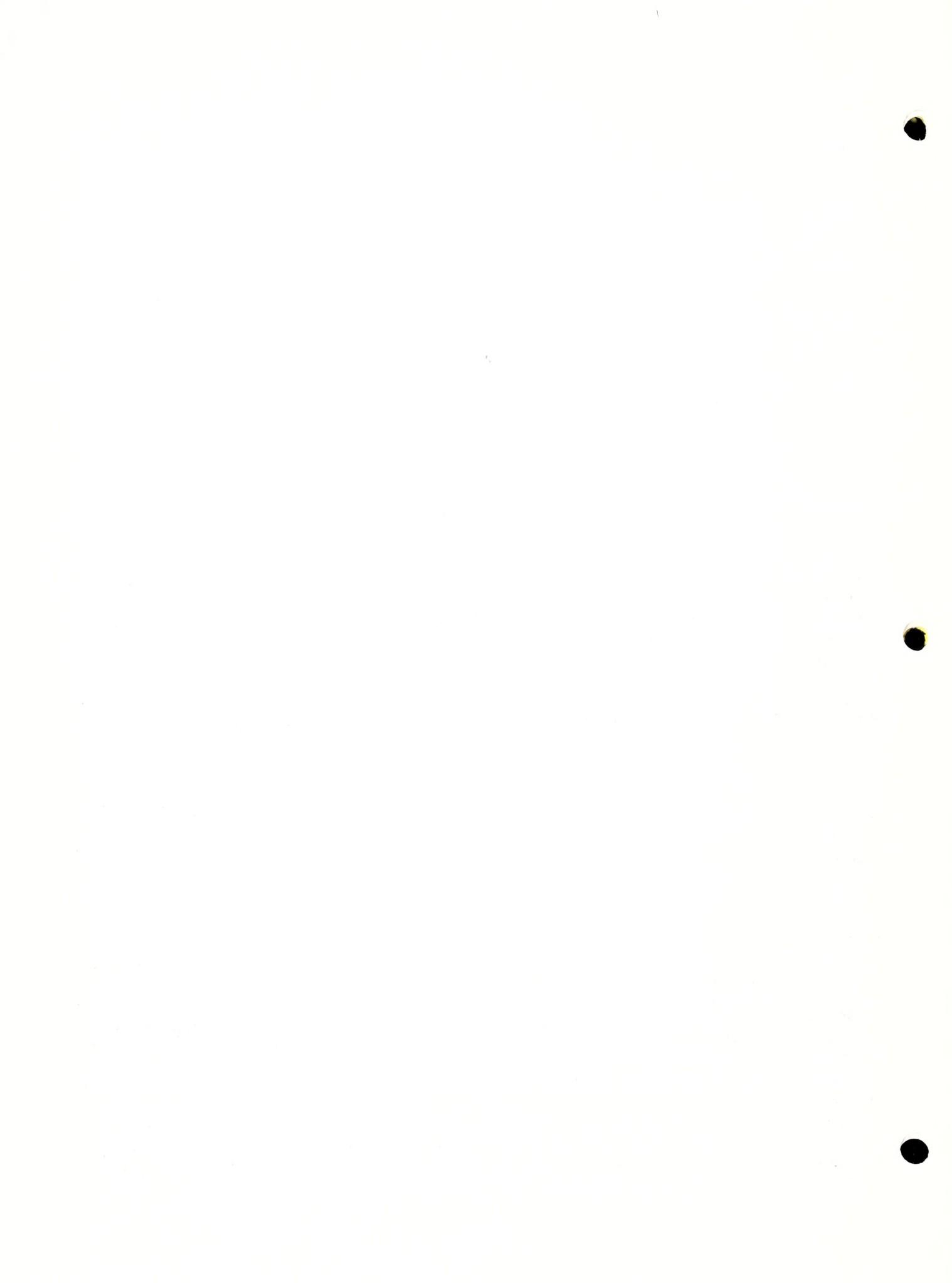
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Compilation of Elemental Concentration Data for NBS Clinical, Biological, Geological, and Environmental Standard Reference Materials

Ernest S. Gladney and Bryan T. O'Malley  
Health and Environmental Chemistry Group, MS K-484  
Los Alamos National Laboratory  
Los Alamos, New Mexico 87545

Iwan Roelandts  
Geologie, Petrologie, et Geochimie  
Universite de Liege  
B-4000 Sart-Tilman par Liege 1  
Belgium

Thomas E. Gills  
Office of Standard Reference Materials  
National Bureau of Standards  
Gaithersburg, Maryland 20899

Concentration data on as many as 92 constituents in 166 NBS Standard Reference Materials have been collected from over 1500 journal articles and technical reports. These data are summarized in consensus (mean) values with uncertainties expressed as  $\pm$  one standard deviation and compared with all available certification data from NBS. Data are presented on the analytical procedures employed and all raw data are given in the tables. This compilation is a successor to NBS Special Publication 260-88.

**Key words:** Analytical methods, biological, certified, clinical, compilation, consensus values, environmental, geological, informational values, literature values, mean values, Standard Reference Materials, SRM.

DISCLAIMER

Certain commercial equipment, instruments, or materials are identified in this report to adequately specify the procedure used for data compilation. Such identification does not imply recommendation or endorsement by the National Bureau of Standards or the Department of Energy, nor does it imply that the materials or equipment identified are necessarily the best available for the purpose.

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1. Introduction

This compilation is a revised, updated, and expanded version of the 1982 edition published as NBS Special Publication 260-88 in 1984 (1). It is produced in a "living manual" format with the intent that individual tables will be revised whenever sufficient new data have appeared in the literature. These revisions will be provided to all known holders of the manual.

The National Bureau of Standards (NBS) has produced nearly 200 Standard Reference Materials

(SRM's) for use in clinical, biological, geological, and environmental analytical chemistry. The basic goal of the SRM program is to provide homogeneous and stable materials of a variety of natural matrices, for use in technique development and in analytical quality assurance. The function of SRM's in the latter role has been well-documented in a series of publications by Taylor (2-5). Standard Reference Materials carry the full legal weight and authority of NBS and the U.S. Department of Commerce, as they have been specifically authorized by federal legislation.

The concentrations of as many as 44 constituents have been determined by NBS at one of two confidence levels in each SRM: certified values and non-certified or informational values. The former is the present best estimate of the true concentration of that constituent and is not expected to deviate from that concentration by more than the stated uncertainty. These certified concentrations are determined at NBS or with cooperating laboratories using either a definitive method, two or more independent methods, or reference methods. These methods and other certification criteria have been carefully defined by Uriano and Gravatt (6). Constituent concentrations that are labeled as non-certified or informational are those that NBS has not measured by a definitive method, a reference method, or two or more independent methods.

A limitation of many of these SRM's has been the restricted number of constituents that NBS can afford to certify in each material. Numerous investigators outside NBS have published concentration data on constituents in these reference materials. Although brief review articles on NBS SRM's occasionally appear in the literature (7,8), we believe that the user should have access to both the summarized "consensus" value or mean concentration value and all the data on which they were based. This philosophy has been the basis of most of our previous compilation efforts (9-18). Because abstracting services do not have a category "standard reference materials" and this label is rarely used in keyword indices published with articles, the widely scattered data in reports, articles, books, and conference proceedings have been collected only with difficulty.

Data compilations also provide a mechanism for quality assurance checks on agency or compiler's "certified" values. Consistent disagreement between the user community and a certifying agency should encourage the material's producer to carefully re-examine his certification measurements on the element(s) that are in dispute.

There has been continuing controversy among compilers concerning the determination and reporting of final compositional information on reference materials. Flanagan (19) has used "recommended", "average", and "magnitude" to characterize his "estimates" for major components and trace elements in United States Geological

Survey materials. Abbey (20,21) has coined the term "usable value" for some of his results and pioneered the "select Laboratories" approach for arriving at overall compositional information. Gladney and Goode (13) elected to report only "mean values" and associated standard deviations without further attempt to assess the varying quality of data determined by different analytical techniques. For the French geostandards (CRPG, ANRT) Roubault, et al. (22) have considered "recommended", "preferred", and "proposed" values depending upon the degree of confidence they felt could be attached to the data. Steele, et al.(23), have reported "recommended" values in the six NIMROCK rock samples using some statistical methods. Gladney, et al. (15), chose the term "consensus values" to describe their mean values calculated for USGS rocks after judgemental and statistical eliminations of initial outliers. Lister (24) has examined other "robust" estimators which he believes provide better estimates of true concentrations than mean values. Flanagan (25) has used two-way analysis of variance to produce "best estimates of composition" on three recent USGS reference rock samples. Abbey and Rousseau (26) have debated the merits of "Pragmatism vs Rigour" as approaches to the resolution of "disparate" analytical data on four Canadian Iron-Formation reference samples. Lister (27) has used plotting of "S-distribution curves" in an attempt to more closely examine analytical data included in reference materials compilations. Abbey (28) has also recently examined the use of "robust" estimators and Flanagan (29) has recently reviewed the entire spectrum of approaches to composition determination in reference samples.

Approaches to value judgement of data quality or even the advisability of compiling reference materials data can be debated endlessly. The responsibility for the informed end use of these compiled data, regardless of who performed the compilation, lies with individual investigators. Each should read our methodology carefully and critically so that he may decide for himself its limitations. The values in the tables must not be used uncritically. All data behind our mean "consensus values" are presented in the succeeding table so that anyone may recalculate them to reflect his own experience whenever desired.

## 2. Data Compilation

A listing of the 167 SRM's included in this document is provided in Table I, along with the most recent certification date, the number of data points included in the present compilation, and the relative amount of this data which is new from the previous compilation. All NBS certified and informational values for these SRM's are reported in the individual data tables for ease of comparison. Certified values have uncertainties stated, while informational/uncertified values do not.

The 67 major journals in analytical chemistry, geology, petrology, geochemistry, and environmental science that have been surveyed are shown in Table II. Less comprehensive coverage of books and institutional reports for 1972-1985 has been achieved. More than 1500 different references containing original data on NBS materials have been located. All tables containing summarized data are numbered xxxx-1 while all individual data follow in the table numbered xxxx-2, where xxxx is the NBS SRM number of the material. These latter tables contain the individual data, uncertainties (where provided), references, and the analytical techniques used.

All individual data located were assembled using a VAX 11/730 minicomputer with a VAX-VMS (version 4.2) operating system, an RA-80 121 Mb fixed-media disc drive, three RL-02 10 Mb cartridge disc drives, the Common Data Dictionary (version 3.2) and VAX Datatrieve (version 3.2) software packages (all are registered trademarks of the Digital Equipment Corporation, Maynard, Massachusetts). Datatrieve is an interactive data storage and maintenance software system that provides facilities for selective data retrieval, updating, sorting, formatting, and report generation with a minimum of programming overhead. Data were hand-entered into the system via terminal keyboard from copies of the original references. Details of our Datatrieve based data management system are published elsewhere (30).

Upon closing of the database for calculation and publication of the compiled data, all individual records were inspected for typographical errors in material name, element name, units, analytical methods, etc. Those identified were corrected using simple user-generated Datatrieve procedures. Data were then sorted by material,

then constituent, and finally units. This collection was inspected (via another user-generated Datatrieve procedure) to identify constituents within a given material that had two or more unit types for the same element. These were then corrected to the same set of units for each conflicting set found using another Datatrieve procedure. Data were resorted by material, constituent, and in ascending order of concentration within each constituent (this can be accomplished in a single operation within Datatrieve). This year, to conserve space, we have chosen to eliminate all reports of limit values (less-than and greater-than) from materials and elements where the data justify confidence in our ability to report a real consensus value. Some subjective criteria, as described by Abbey (21) were used to eliminate data on either end of the reported concentration spectrum that we judged to be clearly beyond the limits of acceptability. Following these eliminations (usually less than 1% of the total data), an initial mean and standard deviation were computed using all remaining data for a given constituent in each SRM. All data points now outside  $\pm$  two standard deviations from the initial mean were dropped and a revised mean and standard deviation recomputed. These final means and associated standard deviations are reported as our consensus values in Tables 1A-1 to 4355-1 for up to 92 constituents. The number of literature values used to calculate each final value is indicated in the tables. Where sufficient data exist, the median was also determined using all data other than "less-than" values.

The compiled data were again resorted by material, constituent, and groups of analytical methods. An iterative mean and standard deviation (using  $\pm 2s$  for first round eliminations) were calculated for groups of analytical methods which had sufficient data (i.e., instrumental thermal, instrumental epithermal, radiochemical thermal, radiochemical epithermal, general neutron activation, and delayed neutron methods were all combined into neutron activation; general, wave-length dispersive, and energy dispersive methods into X-ray fluorescence, etc.). These analytical method means and associated standard deviations are also included in the tables.

Mean values in the summary tables (xxxx-1 series) that are based upon less than three data points do not include standard deviations. In a few cases the reported data had such a wide range

as to render the mean value calculation meaningless. Such cases are reported as ranges only (no standard deviation specified). Additionally, there are a few elements where only upper limit data exist, and these are given as only limit values in the tables.

### 3. Discussion

Our consensus values for major and minor elements in some SRM's can be subjected to a test commonly used by geochemists. "Whole material" summations, similar to geochemists "whole rock" summations, can be calculated from elemental data when oxygen data are available, or the elements can be converted to stoichiometric oxides and then summed. The latter approach is inappropriate for coals, oils, biologicals, and non-silicate rocks where many elements are not present in oxide forms. Because we still have not located any reports of oxygen determination in any of the biological SRM's, the "whole material" summation test cannot yet be applied. There are sufficient oxygen data on three coals and two fly ash materials to attempt the "whole material" summation. It is important that all concentration data used are either on a "dry-weight" basis or that the hydrogen or bound and unbound water be included as individual items in constituents summed. For two silicate rock SRM's where insufficient oxygen data exist, major and minor elements have been converted to stoichiometric oxide forms and summed. In all cases, the uncertainties (where known) are propagated onto the final sum using standard statistical techniques. The results of these calculations are shown below in Table III. Summations of 99 - 101 % are considered a good indication that the major and minor element data are reasonably accurate and internally consistent. The material summations for NBS SRM's 278, 688, 1632A, 1633, 1633A, and 1635 meet this quality criteria, although the propagated uncertainty on the coals (1632A and 1635) are much larger than one would prefer. The summation for NBS SRM 1632 is over 2% lower than the previous compilation, due to a drop in the consensus value for oxygen. Since the two oxygen measurements located differ by a factor of 1.5, the uncertainty on this consensus value is quite high. In the future it is hoped that good oxygen data will be available so that this approach can be applied to a larger number of materials.

The growth of the body of SRM data since the last compilation is summarized in Table I. More details about the changing patterns in reference material measurements, their sources, the analytical techniques used, and the constituents measured were recently described by Gladney and Roelandts (31).

The key to analytical method codes (METHOD) is given in Table IV. The key to the COMMENT code is given in Table V. All data reported as oxides in the original references were converted to elemental form using the conversion factors shown in Table VI. The individual data (CONC), their uncertainties when provided (UNCER), analytical technique used (METHOD), and the individual references are given in Tables numbered xxxx-2 for each SRM. These tables were generated with user-written Datatrieve "procedures," the VAX Datatrieve report writing facilities and the DEC Keypad editor. All tables were printed on a Hewlett-Packard LaserJet printer. Data that were reported as "greater-than" values have been omitted entirely, and "less-than" values are shown as "<" under CONC and "L" under COMMENT. As mentioned above, less-than values that no longer offer any useful perspective on elements with well-established values have been dropped from the database to conserve space. The data have been sorted in ascending order based upon material, constituent, and concentration using VAX Datatrieve. All the references (CODE and NUM) have been identified in Reference Appendix. The CODE consists of the last two digits of the year of publication plus the first three letters of the first author's last name. The two digit numerical suffix (NUM) is provided to enable handling of multiple reports by the same first author in the same year. This particular reference coding system was adopted in preference to a sequential numbering system in 1980 to permit rapid searching of the reference database using Datatrieve, and to permit easy random updating of both the reference and concentration databases without the necessity of renumbering the references. Since over 4000 references with data on various NBS, United States Geological Survey (USGS), and Canadian Certified Reference Materials Project (CCRMP) materials are now in our system, these considerations are extremely important.

#### 4. Conclusion

Although we have endeavored to achieve as wide a coverage of the literature as possible, we realize that this compilation is still incomplete. We appreciate the efforts of those investigators who have sent us their data directly, and we continue to request that the users of this compilation call our attention to omissions and errors so that they may be corrected in subsequent editions. Anyone with unpublished results or data published in "technical reports" that may not be widely circulated, on any NBS, USGS, or CCRMP reference materials are urged to send their data to the first author of this compilation and it will be placed in our database with appropriate reference to the source.

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#### CREDIT

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#### REFERENCES

1. Gladney, E. S., C. E. Burns, D. R. Perrin, I. Roelandts, and T. E. Gills, "1982 Compilation of Elemental Concentration Data for NBS Biological, Geological, and Environmental Standard Reference Materials," NBS Special Publication 260-88, 221 pp., 1984.
2. Taylor, J. K., Anal. Chem., 53: 1588A-1596A (1981).
3. Taylor, J. K., "Reference Materials -- How They Are, or How They Should be Used," Presented at the ASTM C-26 Committee Meeting, Knoxville, TN, 1982.
4. Taylor, J. K., Anal. Chem., 55: 600A-608A (1983).
5. Taylor, J. K., "Handbook for SRM Users," NBS Special Publication 260-100, 1985.
6. Uriano, G. A., and C. C. Gravatt, Crit. Rev. Anal. Chem., 6: 361-411 (1977).
7. Nadkarni, R. A. and G. H. Morrison, J. Radioanal. Chem., 43: 347-369 (1978).
8. Gladney, E. S., Anal. Chim. Acta, 118: 385-396 (1980).
9. Gladney, E. S., "Compilation of Elemental Concentration Data for NBS Biological and Environmental Standard Reference Materials," Los Alamos Scientific Laboratory Report LA-8438-MS, Los Alamos, New Mexico, 119 pp., 1980.
10. Gladney, E. S., "Compilation of Elemental Concentration Data for United States Geological Survey's Eight New Rock Standards," Los Alamos Scientific Laboratory Report LA-8265-MS, Los Alamos, New Mexico, 55 pp., 1980.
11. Gladney, E. S., "Compilation of Elemental Concentration Data for Fourteen Canadian Certified Reference Materials Project Standards," Los Alamos Scientific Laboratory Report LA-8382-MS, Los Alamos, New Mexico, 28 pp., 1980.

12. Gladney, E. S., "Compilation of Elemental Concentration Data for the United States Geological Survey's Six Geochemical Exploration Reference Materials," Los Alamos Scientific Laboratory Report LA-8473-MS, Los Alamos, New Mexico, 18 pp., 1980.
13. Gladney, E. S. and W. E. Goode, Geostandards Newsletter, 5: 31-64 (1981).
14. Gladney, E. S., "Comparison of Methods for Calculation of Recommended Elemental Concentrations for Canadian Certified Reference Materials Project Rock Standards SY-2, SY-3, and MRG-1," Los Alamos Scientific Laboratory Report LA-8770-MS, Los Alamos, New Mexico, 4 pp., 1981.
15. Gladney, E. S., C. E. Burns, and I. Roelandts, Geostandards Newsletter, 7: 3-226 (1983).
16. Gladney, E. S., C. E. Burns, and I. Roelandts, Geostandards Newsletter, 8: 119-154 (1984)
17. Gladney, E. S., C. E. Burns, and I. Roelandts, Geostandards Newsletter, 9: 35-68 (1985).
18. Abbey, S. and E. S. Gladney, Geostandards Newsletter, 10: 3-11 (1986).
19. Flanagan, F. J., Geochim. Cosmochim. Acta, 37: 1189-1200 (1973).
20. Abbey, S., Geostandards Newsletter, 2: 141-146 (1978).
21. Abbey, S., X-ray Spect., 7: 99-121 (1978).
22. Roubault, M., H. de la Roche, and K. Govindaraju, Sciences de la Terre, Nancy, IX: 105-121 (1966).
23. Steele, T. W., A. Wilson, R. Goudvis, P. J. Ellis, and A. J. Radford, "Analysis of the NIMROC Reference Samples for Minor and Trace Elements," National Institute of Metallurgy report 1945, 222 pp.
24. Lister, B., Geostandards Newsletter, 8: 171-172 (1984).
25. Flanagan, F. J., "Three USGS Mafic Rock Reference Samples, W-2, DNC-1, and BIR-1," U.S. Geological Survey Bulletin 1623, 54 pp., 1984.
26. Abbey, S. and R. M. Rousseau, Geostandards Newsletter, 9: 1-16 (1985).
27. Lister, B., Geostandards Newsletter, 9: 263-273 (1985).
28. Abbey, S., Geostandards Newsletter, 10: 159-168 (1986).
29. Flanagan, F. J., "Reference Samples in Geology and Geochemistry," U. S. Geological Survey Bulletin 1582, 72 pp., 1986.
30. Gladney, E. S., "Data Base Design and Management for Elemental Compositional Studies of Environmental and Geological Reference Materials," Los Alamos National Laboratory report, in press, 1987.
31. Gladney, E. S. and I. Roelandts, "Distribution of NBS, USGS, and CCRMP Reference Material Data in the Literature (1951-1985)," Geostandards Newsletter, 11: in press (1987).

TABLE I: NATIONAL BUREAU OF STANDARDS BIOLOGICAL, ENVIRONMENTAL, AND GEOLOGICAL STANDARD REFERENCE MATERIALS

SRM Number	Name	Certification Date	# data (1986)	% New (1986)
1A	Argillaceous Limestone	1931	98	19
1b	Argillaceous Limestone	1966	77	32
1c	Argillaceous Limestone	1978	37	100
27F	Iron Ore (Sibley)	1977	1	100
56	Tennessee Phosphate Rock	1927	1	0
56B	Phosphate Rock (Tennessee Brown)	1947	3	0
69A	Bauxite	1951	81	44
69B	Bauxite (Arkansas)	1979	0	--
70	Feldspar	1926	24	0
70a	Feldspar	1981	64	22
76	Burnt Refractory	1955	10	0
76A	Burnt Refractory	1985	0	--
77	Burnt Refractory	1955	12	0
77A	Burnt Refractory	1985	0	--
78	Burnt Refractory	1955	2	0
78A	Burnt Refractory	1985	0	--
79A	Fluorspar	1971	1	100
80	Soda-Lime Glass	1927	2	0
81A	Glass Sand	1978	0	--
88	Dolomite	1928	14	21
88A	Dolomitic Limestone	1982	100	48
88B	Dolomitic Limestone	1986	0	--
91	Opal Glass	1931	54	20
92	Soda-Lime Glass Powder	1982	3	100
93A	Borosilicate Glass	1973	2	0
97	Flint Clay	1931	86	3
97A	Flint Clay	1969	64	22
98	Plastic Clay	1931	134	0
98A	Plastic Clay	1969	60	20
99	Soda Feldspar	1931	57	2
99A	Feldspar	1981	42	12
120A	Phosphate Rock (Florida)	1961	21	24
120B	Phosphate Rock (Florida)	1979	188	43
181	Lithium Ore (Spodumene)	1981	1	100
182	Lithium Ore (Petalite)	1981	0	--
183	Lithium Ore (Lepidolite)	1981	0	--
278	Obsidian Rock	1981	296	59
330	Copper Ore, Mill Heads	1977	0	--
331	Copper Ore, Mill Tails	1977	0	--
332	Copper Concentrate	1977	1	100
333	Molybdenum Concentrate	1977	0	--
470	Mineral Glasses for Microanalysis	1979	0	--
610	Trace Elements in Glass (500 ppm)	1972	126	72
612	Trace Elements in Glass (50 ppm)	1982	112	85
614	Trace Elements in Glass (1 ppm)	1982	81	84
616	Trace Elements in Glass (0.02 ppm)	1982	24	88

TABLE I: NATIONAL BUREAU OF STANDARDS BIOLOGICAL, ENVIRONMENTAL, AND GEOLOGICAL STANDARD REFERENCE MATERIALS  
 (cont.)

SRM Number	Name	Certification Date	# data (1986)	% New (1986)
633	Portland Cement	1974	11	100
634	Portland Cement	1974	3	100
635	Portland Cement	1974	10	100
636	Portland Cement	1974	11	100
637	Portland Cement	1974	10	100
638	Portland Cement	1974	10	100
639	Portland Cement	1974	10	100
688	Basalt Rock	1981	255	76
694	Western Phosphate Rock	1984	0	--
696	Bauxite (Surinam)	1979	30	100
697	Bauxite (Dominican)	1979	0	--
698	Bauxite (Jamaican)	1979	33	100
909	Human Serum	1985	0	--
1083	Wear-Metals in Lubricating Oil	1985	0	--
1084	Wear-Metals in Lubridating Oil	1985	30	100
1085	Wear-Metals in Lubricating Oil	1985	27	100
1549	Non-Fat Milk Powder	1984	56	100
1566	Oyster Tissue	1983	425	77
1567	Wheat Flour	1978	317	55
1568	Rice Flour	1978	269	58
1569	Brewer's Yeast	1976	139	12
1570	Trace Elements in Spinach	1976	715	36
1571	Orchard Leaves	1977	3113	27
1572	Citrus Leaves	1982	139	89
1573	Tomato Leaves	1976	758	34
1575	Pine Needles	1976	664	34
1577	Bovine Liver	1977	2262	23
1577a	Bovine Liver	1982	216	100
1581A	PCBs in Oil	1982	0	--
1581B	PCBs in Oil	1982	0	--
1581C	PCBs in Oil	1982	0	--
1581D	PCBs in Oil	1982	0	--
1582	Petroleum Crude Oil	1984	8	100
1584	Priority Pollutant Phenols	1984	10	100
1585	Chlorinated Biphenyls	1986	0	--
1587	Nitrated Polycyclic Aromatic Hydrocarbons	1985	0	--
1590	Stabililized Wine	1985	4	100
1614	Dioxin	1985	0	--

TABLE I: NATIONAL BUREAU OF STANDARDS BIOLOGICAL, ENVIRONMENTAL, AND GEOLOGICAL STANDARD REFERENCE MATERIALS  
(cont.)

SRM Number	Name	Certification Date	# data (1986)	% New (1986)
1618	Vanadium and Nickel in Residual Fuel Oil	1985	0	--
1619	Sulfur in Residual Fuel Oil	1981	18	100
1620	Sulfur in Residual Fuel Oil	1979	0	--
1620a	Sulfur in Residual Fuel Oil	1981	19	100
1621	Sulfur in Residual Fuel Oil	1967	5	20
1621a	Sulfur in Residual Fuel Oil	1980	7	14
1621b	Sulfur in Residual Fuel Oil	1981	7	100
1622	Sulfur in Residual Fuel Oil	1967	2	100
1622a	Sulfur in Residual Fuel Oil	1979	5	20
1622b	Sulfur in Residual Fuel Oil	1981	7	100
1622c	Sulfur in Residual Fuel Oil	1986	0	--
1623	Sulfur in Residual Fuel Oil	1971	4	0
1623a	Sulfur in Residual Fuel Oil	1981	6	100
1624	Sulfur in Distillate Fuel Oil	1971	4	0
1624a	Sulfur in Distillate (Diesel) Fuel Oil	1981	6	100
1630	Trace Mercury in Coal	1971	72	4
1631A	Sulfur in Coal	1974	8	50
1631B	Sulfur in Coal	1974	6	33
1631C	Sulfur in Coal	1974	7	43
1632	Trace Elements in Coal	1974	1810	16
1632A	Trace Elements in Coal (Bituminous)	1983	952	51
1632B	Trace Elements in Coal (Bituminous)	1985	0	--
1633	Trace Elements in Coal Fly Ash	1975	2057	13
1633A	Trace Elements in Coal Fly Ash	1985	850	60
1634	Trace Elements in Fuel Oil	1975	138	17
1634A	Trace Elements in Fuel Oil	1982	95	100
1634B	Trace Elements in Fuel Oil	1986	0	--
1635	Trace Elements in Coal (Subbituminous)	1979	454	46
1639	Halocarbons for Water Analysis	1983	0	--
1641	Mercury in Water - Concentrate	1975	1	0
1641A	Mercury in Water - ug/mL	1978	0	--
1641B	Mercury in Water - ug/mL	1983	1	100
1642	Mercury in Water - Trace	1974	0	--
1642A	Mercury in Water - ng/mL	1977	4	75
1642B	Mercury in Water - ng/mL	1982	2	100
1643	Trace Elements in Water	1977	132	61
1643A	Trace Elements in Water	1980	313	88
1643B	Trace Elements in Water	1984	29	100
1645	River Sediment	1982	524	64
1646	Estuarine Sediment	1982	173	98
1647	Priority Pollutant Polynuclear Aromatic Hydrocarbons	1981	13	100
1648	Urban Particulate Matter	1982	371	33
1649	Urban Dust/Organics	1982	64	64

TABLE I: NATIONAL BUREAU OF STANDARDS BIOLOGICAL, ENVIRONMENTAL, AND GEOLOGICAL STANDARD REFERENCE MATERIALS  
(cont.)

SRM Number	Name	Certification Date	# data (1986)	% New (1986)
1818	Total Chlorine in Lubricating Base Oil	1986	0	--
1819	Sulfur in Lubricating Base Oil	1985	0	--
1880	Portland Cement	1984	0	--
1881	Portland Cement	1984	0	--
2661	Benzene on Charcoal	1977	0	--
2661A	Benzene on Charcoal	1978	2	100
2662	m-Xylene on Charcoal	1977	0	--
2663	p-Dioxane on Charcoal	1977	1	100
2664	1,2-Dichloroethane on Charcoal	1977	2	100
2665	Chloroform on Charcoal	1977	1	100
2666	Trichloroethylene on Charcoal	1977	1	100
2667	Carbon tetrachloride on Charcoal	1977	1	100
2670	Toxic Metals in Freeze-Dried Urine	1985	17	100
2671	Freeze Dried Urine Certified for Fluorine	1975	0	--
2672	Freeze-Dried Urine Certified for Mercury	1975	3	100
2674	Lead on Filter Media	1979	0	--
2675	Beryllium on Filter Media	1975	1	100
2676	Metals on Filter Media	1975	0	--
2676A	Metals on Filter Media	1978	9	100
2676B	Metals on Filter Media	1983	0	--
2677	Beryllium and Arsenic on Filter Media	1985	0	--
2679	Quartz on Filter Media	1976	0	--
2682	Sulfur in Coal	1983	75	100
2683	Sulfur in Coal	1983	67	100
2684	Sulfur in Coal	1983	67	100
2685	Sulfur in Coal	1983	67	100
2689	Coal Fly Ash	1986	0	--
2690	Coal Fly Ash	1986	0	--
2691	Coal Fly Ash	1986	0	--
2694	Simulated Rainwater	1986	0	--
4350	Environmental Radioactivity Standard: River Sediment	1975	12	67
4350B	Environmental Radioactivity: River Sediment	1981	23	74
4351	Environmental Radioactivity: Human Lung	1982	0	--
4352	Environmental Radioactivity: Human Liver	1982	0	--
4353	Environmental Radioactivity: Rocky Flats Soil #1	1981	28	82
4355	Environmental Radioactivity: Peruvian Soil	1982	0	--
8412	Corn (Zea Mays) Stalk	1986	0	--
8413	Corn (Zea Mays) Kernel	1986	0	--
8419	Bovine Serum	1985	84	100
8431	Mixed Diet	1986	0	--

TABLE II: LITERATURE SURVEYED

Journal	Vol. #	# data	% total
Acta Chimica Hungarica	113 - 119	0	---
Acta Chimica Scandinavia	39A, 39B	0	---
American Laboratory	11 - 17	132	0.6
American Mineralogist	67 - 70	0	---
Analusis	1 - 13	128	0.6
Analyst	97 - 110	922	4.6
Analytica Chimica Acta	53 - 178	1115	5.5
Analytical Chemistry	44 - 57	3574	17.7
Analytical Instrumentation	13 - 14	0	---
Analytical Letters	1 - 18	97	0.5
Annales de la Societe Geologique de Belgique	91 - 108	0	---
Applied Spectroscopy	25 - 39	265	1.3
Atomic Absorption Newsletter	1 - 18	111	0.6
Atomic Spectrometry	1 - 6	169	0.8
Biological Trace Element Research	1 - 8	31	0.2
Bulletin des Societes Chimiques Belges	80 - 94	3	<0.1
Bunseki Kagaku	24 - 34	966	4.8
Canadian Journal of Earth Sciences	9 - 22	20	0.1
Canadian Journal of Spectroscopy	20 - 30	59	0.3
Chemical Geology	13 - 53	108	0.5
Comptes-Rendus Hebdomadaires des Seances de l'Academie des Sciences (Paris)	272 - 301	1	<0.1
Conference Proceedings	---	1523	7.6
Contributions to Mineralogy and Petrology	36 - 91	10	<0.1
Earth and Planetary Science Letters	1 - 77	15	<0.1
Economic Geology	67 - 80	0	---
Environmental Geology	1 - 5	9	<0.1
Environmental Letters	1 - 10	13	<0.1
Environmental Pollution	29A - 39A	22	0.1
	1B - 10B		
Environmental Research	1 - 38	4	<0.1
Environmental Science and Technology	5 - 19	469	2.3
Fresenius Zeitschrift fur Analytische Chemie	244 - 322	589	2.9
Geochemistry International (trans. from Geokhimiya)	9 - 22	0	---
Geophysical Research Letters	1 - 7	25	0.1
Geochimica et Cosmochimica Acta	36 - 49	169	0.8
Geostandards Newsletter	1 - 9	1146	5.7
Geotechnical Testing Journal	1 - 7	0	---
Geochemical Journal	7 - 19	6	<0.1
International Journal of Applied Radiation and Isotopes	23 - 36	14	<0.1
International Journal of Environmental Analytical Chemistry	1 - 23	161	0.8
International Journal of Environmental Studies	1 - 25	9	<0.1
Journal of Analytical Chemistry of USSR (trans. of Zhurnal Analiticheskoi Khimii)	26 - 38	0	---
Journal of Environmental Quality	1 - 14	14	<0.1
Journal of Environmental Radioactivity	1 - 3	0	---
Journal of Environmental Science and Health	11 - 20	79	0.4
Journal of Geochemical Exploration	1 - 24	0	---
Journal of Petrology	12 - 26	0	---

TABLE II: LITERATURE SURVEYED (cont.)

Journal	Vol. #	# data	% total
Journal of Radicanalytical and Nuclear Chemistry	10 - 96	2436	12.1
Journal of Research of the USGS	1 - 6	25	0.1
Journal of the Association of Official Analytical Chemists	55 - 68	734	3.6
Journal of the Geological Society (London)	127 - 142	0	---
Journal of the Soil Science Society of America	46 - 48	2	<0.1
Journal of the South African Chemical Institute	21 - 37	0	---
Journal of Volcanology and Geothermal Research	1 - 26	0	---
Lithos	4 - 18	0	---
Marine Geology	12 - 44	0	---
Mass Spectroscopy	31 - 32	0	---
Microchemical Journal	17 - 28	3	<0.1
Mikrochimica Acta (Wien)	1972 - 1984	98	0.5
Mineralogy Magazine	40 - 44	0	---
Nuclear Instruments and Methods	114 - 172	268	1.3
Precambrian Research	1 - 14	2	<0.1
Private (Written) Communication	---	278	1.4
Radiochimica Acta	17 - 38	0	---
Radiochemical and Radioanalytical Letters	1 - 59	468	2.3
Reports and Books	---	2617	13.0
Sedimentology	16 - 28	0	---
Spectrochimica Acta	27B - 40B	423	2.1
Spectroscopy Letters	17 - 18	0	---
Talanta	19 - 32	238	1.2
X-ray Spectrometry	1 - 14	179	0.9
Misc. sources	---	364	
Total	---	20113	100.0

TABLE III: WHOLE MATERIAL CONCENTRATION SUMMATIONS OF MAJOR AND MINOR ELEMENTS FOR SELECTED NBS SRMs (%)

	1633	1633A	1632	1632A	1635
ELE	CONSENSUS Mean ± SD				
Al	12.6 ± 0.6	14.4 ± 0.7	1.73 ± 0.10	2.95 ± 0.10	0.295 ± 0.027
Ba	0.266 ± 0.016	0.142 ± 0.010	---	---	---
C	3.3 ± 0.2	---	70.6 ± 1.7	64.4 ± 3.9	62.6
Ca	4.65 ± 0.34	1.14 ± 0.06	0.418 ± 0.042	0.241 ± 0.017	0.535 ± 0.034
Fe	6.16 ± 0.27	9.37 ± 0.23	0.851 ± 0.044	1.11 ± 0.03	0.229 ± 0.006
H	0.02	0.04	4.29 ± 0.22	4.1 ± 0.4	4.07
K	1.69 ± 0.09	1.88 ± 0.05	0.278 ± 0.017	0.411 ± 0.02	---
Mg	1.5 ± 0.3	0.457 ± 0.045	0.156 ± 0.041	0.115 ± 0.02	0.104 ± 0.013
N	---	---	1.20 ± 0.14	1.25 ± 0.04	1.16 ± 0.32
Na	0.3130 ± 0.02	0.173 ± 0.011	---	---	0.239 ± 0.020
O	47.02	47.66	12.6	18.8 ± 0.8	30 ± 8
P	0.101 ± 0.018	0.169 ± 0.024	---	---	---
S	0.450 ± 0.050	0.190 ± 0.070	1.32 ± 0.08	1.55 ± 0.05	0.336 ± 0.024
Si	22.0 ± 1.0	23.0 ± 0.9	3.08 ± 0.24	5.87 ± 0.22	0.590 ± 0.050
Sr	0.138 ± 0.010	---	---	---	---
Ti	0.710 ± 0.050	0.823 ± 0.039	---	0.163 ± 0.01	---
Other	0.33	0.39	0.33	0.27	0.01
Total	101.25 ± 1.3	99.83 ± 1.17	96.85 ± 1.74	101.23 ± 4.01	100.2 ± 8.1

	OXIDE	CONSENSUS Mean ± SD	CONSENSUS Mean ± SD
			278
			688
Al <sub>2</sub> O <sub>3</sub>	14.39 ± 0.25	17.33 ± 0.30	
BaO	0.11 ± 0.01	---	
CO <sub>2</sub>	0.18	0.05	
CaO	1.00 ± 0.02	11.85 ± 0.50	
Fe <sub>2</sub> O <sub>3</sub>	0.49	1.8	
FeO	1.38	7.645	
H <sub>2</sub> O <sup>+</sup>	0.30	0.14	
H <sub>2</sub> O <sup>-</sup>	0.05	0.11	
K <sub>2</sub> O	4.07 ± 0.12	0.19 ± 0.01	
MgO	0.25	8.72 ± 0.36	
MnO	0.05 ± 0.01	0.16 ± 0.01	
Na <sub>2</sub> O	4.72 ± 0.05	2.09 ± 0.11	
P <sub>2</sub> O <sub>5</sub>	0.03	0.16 ± 0.05	
SiO <sub>2</sub>	71.52 ± 1.28	48.22 ± 0.32	
TiO <sub>2</sub>	0.24 ± 0.01	1.18 ± 0.03	
Other	0.16	0.17	
Total	98.98 ± 1.31	99.82 ± 0.77	

TABLE IV: ANALYTICAL METHOD CODES FOR INDIVIDUAL DATA TABLES

Code	Specific Technique	Code	Specific Technique
14NAA	14 MeV Neutron Activation Analysis	GRAV	Gravimetry
AA	General, Flame Atomic Absorption: Unspecified, or Mixed Conditions	HAA	Hydride Evolution Atomic Absorption
AAC	Flame Atomic Absorption Preceeded by Chemical Separation	I	Infrared
ABS	Absorption (69FLA 01)	ICPAF	Inductively Coupled Plasma Atomic Fluorescence
AE+AF	Atomic Emission + Atomic Fluorescence	ICPES	Inductively Coupled Plasma Atomic Emission Spectrometry
AF	Atomic Fluorescence	ICPMS	Inductively Coupled Plasma Mass Spectrometry
AS	Alpha Spectrometry	IDMS	Isotope Dilution Mass Spectrometry
ASV	Anodic Stripping Voltammetry	IE	Ion Exchange (76FLA 04)
CALC	Calculated	IENA	Instrumental Epithermal Neutron Activation
CB	Combustion: Elemental Analyzer	ISE	Ion Selective Electrodes
CB-GC	Combustion + Gas Chromatography	ITNA	Instrumental Thermal Neutron Activation
CHEM	Chemical (taken from several other compilers, usually undefined)	KF	Karl Fischer Method for $\text{H}_2\text{O}^+$
CHEML	Chemiluminescence, Candoluminescence	LC	Liquid Chromatography (reversed or normal phase)
CHROM	Chromatographic	MECA	Molecular Emission Cavity Analysis
COLOR	Colorimetry, Photometry, Spectrophotometry	MOSS	Mossbauer Spectroscopy
CONV	Conventional (taken from several other compilers, usually undefined)	MPOES	Microwave Plasma Optical Emission Spectrometry
COUL	Coulometry	MS	General Mass Spectrometry
CPAA	Charged Particle Activation Analysis	NAA	Neutron Activation Analysis: General, unspecified, or mixed conditons
CPXRF	Charged Particle Induced X-ray Fluorescence	NM	Nuclear Methods (general)
CSV	Cathodic Stripping Voltammetry	NT	Nuclear Track
CVAA	Cold Vapor Atomic Absorption	OES	General, DC Arc Optical Emission Spectrometry
DCPES	Direct Coupled Plasma Atomic Emission Spectrometry	PAA	Photon Activation or X-ray Activation Analysis
DNA	Delayed Neutron Activation Analysis	PC	Paper Chromatography
ESCA	Electron Spectroscopy for Chemical Applications	PEN	Penfield Method ( $\text{H}_2\text{O}^+$ )
ESR	Electron Spin Resonance	POL	Polarography
EXRF	Energy Dispersive X-ray Fluorescence	POT	Potentiometry (69FLA 01, 69FLE 01)
FA	Fire Assay	PM	Petrographic Microscope
FA-AA	Fire Assay-Atomic Absorption	PROBE	Ion or Electron Microprobe Mass Analyzer
FA-OS	Fire Assay-Optical Emission Spectrometry	PYHYD	Pyrohydrolysis
FAA	Flameless Atomic Absorption (Electrothermal, Carbon Rod)	RENA	Radiochemical Epithermal Neutron Activation
FAAC	Flameless Atomic Absorption Preceeded by Chemical Separation	RR	Rapid rock
FAE	Flameless Atomic Emission	RTNA	Radiochemical Thermal Neutron Activation
FD	Freeze Drying	SIMS	Secondary Ion Mass Spectrometry
FE	Flame Emission, Flame Photometry, Atomic Emission	SM	Semi-micro (69FLE 01)
FLUOR	Fluorometry	SSMS	Spark-source Mass Spectrometry
GAMMA	Direct Gamma-ray Counting (without activation)	TC	Thermal Conductivity
GC	Gas Chromatography	TCGS	Thermal Neutron Capture Prompt Gamma-ray Spectrometry
GC-AA	Gas Chromatography-Atomic Absorption Spectrometry	TITR	Titrimetry
GC-MS	Gas Chromatography-Mass Spectrometry	TURB	Turbidimetry
GCMES	Gas Chromatography Microwave Emission	UU	Unspecified
GE	Gas Evolution ( $\text{CO}_2$ in rocks)	VOLT	Voltammetry (76FLA 04)
		VOLU	Volumetry (76FLA 04)
		VV	Various, Mixed Methods
		WXRF	Wavelength Dispersive X-ray Fluorescence
		XRF	General or Unspecified X-ray Fluorescence

TABLE V: COMMENT Codes for Individual Data Tables

Code	Definition
*	Data eliminated from all mean value calculations.
D	Same data reported in two or more references. Duplicate data are flagged and oldest reference used in mean calculations.
H	Hydride generation
L	Limit (less than) data. Not used in computations.
R	Concentration range. Not used in computations.
1	Different nebulizers used for independent results.
2	V <sub>2</sub> O <sub>5</sub> catalyst used in dissolution.
3	Different electrodes used for independent results.
4	Aqueous slurry of reground sample.
5	Different radioactive isotopes or irradiation conditions used for independent results.
6	Different methods of standardization used for independent results.
7	Different chemical separation methods used for independent results.
8	Isotope dilution methods combined with spark source mass spectrometry.
9	Gamma-gamma coincidence.
10	Different neutron filters used for independent results by epithermal neutron activation analysis.
11	Different dissolution or matrix destruction methods used for independent results.
12	Different methods of peak integration or dead time correction used for independent results.
13	Different detectors used for independent results.
14	Different furnace configurations used for independent results.
15	Different laboratories prepared fused beads used for independent results.
16	Different matrix correction methods used for independent results.
17	Different laboratories or analysts reporting independent results in same reference.
18	Different bottles of reference material used for independent results.
19	Duplicate entries from same reference from previous data compilation assembled by another compiler; reason for duplication unknown.
20	Different emission/absorption lines used for independent results.
21	Dichromate used for FeO determination (76FLA 04).
22	Vanadate used for FeO determination (76FLA 04).
23	Modified Penfield method used for H <sub>2</sub> O <sup>+</sup> determination.
24	Different irradiation containers used for independent results.
25	Different colorimetric methods used for independent results.
26	CONC and UNCER should be multiplied by 10(-5).
28	CONC and UNCER should be multiplied by 10(-3).
30	Results were used by NBS to determine certified values.
31	Different chemical methods used for independent results.
32	Different background correction or excitation sources or crystals used for independent results by XRF.
33	Different pellet sizes used for independent results.
34	Reported on a dry weight basis.
35	Reported on an as-received basis.
36	OES pre-ignition at various temperatures for independent results.
37	Karl Fischer titration for H <sub>2</sub> O <sup>+</sup> .
38	CONC and UNCER are X10(9), A/G=atoms/gram
40	Different gamma-rays from the same isotope used for independent results.
41	Acid evolution method for CO <sub>2</sub> determination.
44	Different conditions employed for independent results by Liquid Chromatography.

TABLE VI: Factors Used for Oxide to Element Conversions

Oxide	Multiplier	Oxide	Multiplier
$\text{Al}_2\text{O}_3$	0.529	$\text{Mn}_2\text{O}_3$	0.696
$\text{B}_2\text{O}_3$	0.311	$\text{Mn}_3\text{O}_4$	0.720
$\text{BaO}$	0.896	$\text{MoO}_3$	0.667
$\text{BeO}$	0.360	$\text{Na}_2\text{O}$	0.742
$\text{CO}_2$	0.273	$\text{Nd}_2\text{O}_3$	0.857
$\text{CaO}$	0.715	$\text{NiO}$	0.786
$\text{CdO}$	0.875	$\text{P}_2\text{O}_5$	0.436
$\text{CoO}$	0.786	$\text{PbO}$	0.928
$\text{Cr}_2\text{O}_3$	0.684	$\text{Rb}_2\text{O}$	0.914
$\text{Cs}_2\text{O}$	0.943	$\text{SiO}_2$	0.467
$\text{CuO}$	0.799	$\text{SO}_3$	0.400
$\text{FeO}$ to $\text{Fe}_2\text{O}_3$	1.112	$\text{Sc}_2\text{O}_3$	0.652
$\text{FeO}$	0.777	$\text{SrO}$	0.846
$\text{Fe}_2\text{O}_3$	0.699	$\text{TiO}_2$	0.599
$\text{Ga}_2\text{O}_3$	0.592	$\text{U}_3\text{O}_8$	0.848
$\text{K}_2\text{O}$	0.830	$\text{V}_2\text{O}_5$	0.560
$\text{La}_2\text{O}_3$	0.853	$\text{Y}_2\text{O}_3$	0.787
$\text{Li}_2\text{O}$	0.465	$\text{ZnO}$	0.803
$\text{MgO}$	0.603	$\text{ZrO}_2$	0.740
$\text{MnO}$	0.774		

TABLE 1A-1: COMPILED DATA FOR NBS SRM 1A ARGILLACEOUS LIMESTONE (revised 3/1/86)

ELE	UNITS	NBS Mean	CONSENSUS		MEDIAN		RANGE		XRF Mean	OES		OTHER METHODS		
			Mean ± SD	(n)						Mean ± SD	(n)	Mean ± SD	(n)	Method
Al	%	2.2	2.23 ± 0.08	(7)	2.23		2.1 - 2.36		---	2.16	(2)	2.18	(2)	COLOR
Al	%	---	---		---		---		---	---		2.36	(1)	RR
Al	%	---	---		---		---		---	---		2.29	(1)	TITR
Al	%	---	---		---		---		---	---		2.27	(1)	DCPES
As	ug/g	---	1.6	(1)	---		---		---	---		1.6	(1)	AA
B	ug/g	---	90	(2)	---	80 - 100			---	90	(2)	---		
Ba	ug/g	---	< 800		---		---		---	< 800		---		
Be	ng/g	---	670	(1)	---		---		---	---		670	(1)	AA
Bi	ng/g	---	57	(1)	---		---		---	---		57	(1)	AA
C-I	%	9.15	9.05 ± 0.20	(3)	9.16		8.82 - 9.17		---	---		9.05 ± 0.20	(3)	COUL
C-O	ug/g	6100	5600	(1)	---		---		---	---		5600	(1)	CALC
C-T	%	---	9.72	(2)	---	9.72 - 9.73			---	---		9.72	(1)	COUL
C-T	%	---	---		---		---		---	---		9.73	(1)	CB
Ca	%	29.54	29.6 ± 0.1	(3)	29.6		29.5 - 29.7		29.6 (1)	---		29.7	(1)	DCPES
Ca	%	---	---		---		---		---	---		29.5	(1)	RR
Cd	ng/g	---	32	(1)	---		---		---	---		32	(1)	AA
Co	ug/g	---	3.9	(1)	---		---		---	---		3.9	(1)	NAA
Cr	ug/g	---	26.5	(2)	---	23 - 30			---	30	(1)	23	(1)	NAA
Cu	ug/g	---	3	(1)	---		---		---	3	(1)	---		
Fe	%	1.14	1.11 ± 0.03	(5)	1.1		1.08 - 1.15		---	1.08	(1)	1.1	(1)	COLOR
Fe	%	---	---		---		---		---	---		1.08	(1)	DCPES
Fe	%	---	---		---		---		---	---		1.15	(1)	TITR
Fe	%	---	---		---		---		---	---		1.13	(1)	RR
Ga	ug/g	---	4	(1)	---		---		---	4	(1)	---		
Hg	ng/g	---	57.7	(2)	---	44 - 71.4			---	---		57.7	(2)	AA
K	ug/g	5900	6900	(1)	---		---		---	---		6900	(1)	RR
La	ug/g	---	100	(1)	---		---		---	100	(1)	---		
LOI	%	34.55	---		---		---		---	---		---		
Mg	%	1.32	1.34 ± 0.05	(4)	1.3		1.29 - 1.39		---	1.30	(2)	1.39	(1)	DCPES
Mg	%	---	---		---		---		---	---		1.37	(1)	RR
Mn	ug/g	290	440 ± 100	(3)	500		320 - 500		---	440 ± 100	(3)	---		
Mo	ug/g	---	< 1		---		---		---	< 1		---		
Na	ug/g	2890	2500	(2)	---	2300 - 2700			---	---		2700	(1)	DCPES
Na	ug/g	---	---		---		---		---	---		2300	(1)	RR
Ni	ug/g	---	10	(1)	---		---		---	10	(1)	---		
P	ug/g	650	1075	(2)	---	650 - 1500			650 (1)	1500	(1)	---		
Pb	ug/g	---	19.3 ± 1.6	(4)	19.1		17.2 - 21		---	20	(1)	19.1 ± 1.9	(3)	AA
S	ug/g	2500	2850 ± 160	(8)	2800		2620 - 3073		---	2800	(1)	2840 ± 200	(5)	CB
S	ug/g	---	---		---		---		---	---		3000	(1)	TURB
Sb	ng/g	---	630	(1)	---		---		---	---		630	(1)	AA
Sc	ug/g	---	15	(1)	---		---		---	15	(1)	---		
Si	%	6.59	6.60 ± 0.08	(5)	6.58		6.53 - 6.72		6.53 (1)	6.54	(1)	6.63	(1)	COLOR
Si	%	---	---		---		---		---	---		6.58	(1)	RR
Si	%	---	---		---		---		---	---		6.72	(1)	DCPES
Sn	ug/g	---	2.13	(2)	---	1.68 - 2.58			---	---		2.13	(2)	AA
Sr	ug/g	1950	1910 ± 140	(4)	1940		1700 - 2000		---	1880 ± 160	(3)	2000	(1)	NAA
Ti	ug/g	960	940 ± 50	(4)	960		900 - 1000		---	1250	(2)	900	(1)	DCPES
Ti	ug/g	---	---		---		---		---	---		960	(1)	NAA
Ti	ug/g	---	---		---		---		---	---		900	(1)	RR
U	ug/g	---	156	(1)	---		---		---	---		156	(1)	ICPES
V	ug/g	---	30	(1)	---		---		---	30	(1)	---		
Y	ug/g	---	10	(1)	---		---		---	10	(1)	---		
Zn	ug/g	---	20.15	(2)	---	17 - 23.3			17 (1)	---		23.3	(1)	NAA
Zr	ug/g	---	60	(1)	---		---		---	60	(1)	---		

TABLE 1A-2: INDIVIDUAL DATA FOR NBS SRM 1A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>						<u>Cd (ng/g)</u>				
2.1			OES	62JOE 01		32			AA	84TER 01
2.17	0.01	11	COLOR	83OHM 01						
2.19	0.01	11	COLOR	83OHM 01						
2.23			OES	78KNO 01						
2.27			DCPES	73KAR 01			<	10	L	OES
2.29			TITR	58WAT 01		3.9		1.4	RTNA	61TUR 01
2.36			RR	73KAR 01						
<u>As (ug/g)</u>						<u>Cr (ug/g)</u>				
1.6			HAA	84TER 04		23			RTNA	61TUR 01
						30			OES	63CLA 01
<u>B (ug/g)</u>						<u>Cu (ug/g)</u>				
80		3	OES	63CLA 01		3			OES	63CLA 01
100		3	OES	63CLA 01						
<u>Ba (ug/g)</u>						<u>Fe (%)</u>				
	<	800	L	OES	63CLA 01	0.855			OES	62JOE 01
						1.08			OES	78KNO 01
						1.08			DCPES	73KAR 01
						1.1			COLOR	59COL 01
						1.13			RR	73KAR 01
670			AA	82TER 02		1.15			TITR	69WIC 01
670		D	AA	83TER 01						
<u>Bi (ng/g)</u>						<u>Ga (ug/g)</u>				
57		D	FAA	84TER 03		4			OES	63CLA 01
57			HAA	84TER 02						
<u>C-I (%)</u>						<u>Hg (ng/g)</u>				
8.8234	0.5651	41	COUL	85ENG 01		44			FAA	75HEI 01
9.16	0.07	41	COUL	86CAH 01		71.4	2.16		FAA	82FLA 01
9.1673	0.0273	41	COUL	85ENG 01						
<u>C-O (ug/g)</u>						<u>K (ug/g)</u>				
5600	1800		CALC	86CAH 01		6900			RR	73KAR 01
<u>C-T (%)</u>										
9.72	0.17		COUL	86CAH 01		<u>La (ug/g)</u>				
9.73			CB	78TER 01		100			OES	63CLA 01
<u>Ca (%)</u>										
28.6			OES	62JOE 01		<u>Mg (%)</u>				
29.5			RR	73KAR 01		1.29			OES	78KNO 01
29.6			XRF	78KNO 01		1.3			OES	62JOE 01
29.7			DCPES	73KAR 01		1.37			RR	73KAR 01
						1.39			DCPES	73KAR 01

TABLE 1A-2: INDIVIDUAL DATA FOR NBS SRM 1A (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mn (ug/g)</u>					<u>Si (%)</u>				
320			OES	78KNO 01	6.53			XRF	78KNO 01
500	3		OES	63CLA 01	6.54			OES	62JOE 01
500	3		OES	63CLA 01	6.58			RR	73KAR 01
					6.63			COLOR	74SHA 01
					6.72			DCPES	73KAR 01
<u>Mo (ug/g)</u>					<u>Sn (ug/g)</u>				
< 1	1	L	OES	63CLA 01	1.68			AA	82TER 01
					2.58	0.1		FAA	85TER 01
2300			RR	73KAR 01					
2700			DCPES	73KAR 01					
<u>Ni (ug/g)</u>					<u>Sr (ug/g)</u>				
10			OES	63CLA 01	1700			OES	75THO 01
					1940			OES	58GRA 01
					2000		3	OES	63CLA 01
					2000			RTNA	61TUR 01
					3000		3	OES	63CLA 01
<u>P (ug/g)</u>					<u>Ti (ug/g)</u>				
650			WXRF	71FAB 01	900			RR	73KAR 01
1500			OES	78KNO 01	900			DCPES	73KAR 01
					960	61		RTNA	65WAH 01
17.2			FAA	75CAM 02	1000			OES	78KNO 01
19.1			AA	84TER 01	1500		3	OES	63CLA 01
20			OES	63CLA 01	2500		3	OES	63CLA 01
21			FAA	79HEI 03					
<u>S (ug/g)</u>					<u>U (ug/g)</u>				
2620			CB	84LEC 02	155.75	1.86		ICPES	83NOR 01
2700			CB	55COL 01					
2800			CB	74RUN 01					
2800			OES	78KNO 01	30			OES	63CLA 01
2800			UU	72BOU 01					
3000			TURB	73SHA 01					
3020	90		CB	77LAN 01					
3073			CB	78TER 01	10			OES	63CLA 01
<u>Sb (ng/g)</u>					<u>Zn (ug/g)</u>				
630			HAA	84TER 04	17			XRF	65BAL 01
					23.3			RTNA	65BAL 01
<u>Sc (ug/g)</u>					<u>Zr (ug/g)</u>				
15			OES	63CLA 01	60			OES	63CLA 01

TABLE 1B-1: COMPILED DATA FOR NBS SRM 1B ARGILLACEOUS LIMESTONE (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		RANGE	AA	ICPES		OES	OTHER METHODS	
			Mean	Mean ± SD (n)			Mean (n)	Mean (n)		Mean (n)	Method
Ag	ug/g	---	< 5		---	---	< 5	---	---	---	
Al	ug/g	5920	5730	(2)	5660 - 5800	---	5660 (1)	5800 (1)	---	---	
As	ug/g	---	< 5		---	---	< 5	---	---	---	
Au	ug/g	---	< 3		---	---	< 3	---	---	---	
Ba	ug/g	---	86	(1)	---	---	86 (1)	---	---	---	
Be	ng/g	---	420	(1)	---	---	420 (1)	---	---	---	
Bi	ug/g	---	< 25		---	---	< 25	---	---	---	
C-I	%	11.0	---		---	---	---	---	---	---	
Ca	%	36.4	36.31 ± 0.44	(3)	35.93 - 36.8	36.2 (1)	35.93 (1)	36.8 (1)	---	---	
Cd	ng/g	---	41	(2)	30 - 52	30 (1)	---	---	52 (1)	IDMS	
Ce	ug/g	---	7.81	(1)	---	---	7.81 (1)	---	---	---	
Cl	ug/g	---	70	(1)	---	---	---	---	70 (1)	XRF	
Co	ug/g	---	4.1	(1)	---	---	4.1 (1)	---	---	---	
Cr	ug/g	---	15.7	(1)	---	---	15.7 (1)	---	---	---	
Cu	ug/g	---	5.5	(1)	---	---	5.5 (1)	---	---	---	
Dy	ug/g	---	0.9	(1)	---	---	0.9 (1)	---	---	---	
Er	ng/g	---	570	(1)	---	---	570 (1)	---	---	---	
Eu	ng/g	---	240	(1)	---	---	240 (1)	---	---	---	
F	ug/g	---	1766	(1)	---	---	---	---	1766 (1)	XRF	
Fe	ug/g	5240	5320 ± 280	(3)	5000 - 5500	5500 (1)	5460 (1)	5000 (1)	---	---	
Gd	ug/g	---	0.97	(1)	---	---	0.97 (1)	---	---	---	
Hg	ng/g	---	15.7	(1)	---	15.7 (1)	---	---	---	---	
Ho	ng/g	---	200	(1)	---	---	200 (1)	---	---	---	
K	ug/g	2100	2100	(2)	2000 - 2200	2200 (1)	2000 (1)	---	---	---	
LOI	%	41.1	---		---	---	---	---	---	---	
La	ug/g	---	6.86	(1)	---	---	6.86 (1)	---	---	---	
Li	ug/g	---	< 2		---	---	< 2	---	---	---	
Lu	ng/g	---	80	(1)	---	---	80 (1)	---	---	---	
Mg	ug/g	2170	2150 ± 220	(3)	2000 - 2400	2000 (1)	2040 (1)	2400 (1)	---	---	
Mn	ug/g	1550	1510 ± 85	(3)	1430 - 1600	1600 (1)	1510 (1)	1430 (1)	---	---	
Mo	ug/g	---	< 3		---	---	< 3	---	---	---	
Na	ug/g	300	330	(2)	260 - 400	400 (1)	260 (1)	---	---	---	
Nd	ug/g	---	4.88	(1)	---	---	4.88 (1)	---	---	---	
Ni	ug/g	---	11	(1)	---	---	11 (1)	---	---	---	
P	ug/g	350	370	(1)	---	---	370 (1)	---	---	---	
Pb	ug/g	---	9.5	(2)	2 - 17	2 (1)	17 (1)	---	---	---	
Pr	ug/g	---	1.18	(1)	---	---	1.18 (1)	---	---	---	
S	ug/g	---	146	(2)	100 - 192	---	---	---	192 (1)	XRF	
S	ug/g	---	---		---	---	---	---	100 (1)	CB	
Sb	ug/g	---	< 10		---	---	< 10	---	---	---	
Se	ug/g	---	< 30		---	---	< 30	---	---	---	
Si	%	2.3	2.3	(2)	2.28 - 2.32	---	---	2.32 (1)	2.28 (1)	COLOR	
Sm	ug/g	---	0.89	(1)	---	---	0.89 (1)	---	---	---	
Sn	ug/g	---	< 3		---	---	< 3	---	---	---	
Sr	ug/g	1180	1170 ± 60	(3)	1100 - 1208	1100 (1)	1208 (1)	1200 (1)	---	---	
Th	ug/g	---	< 25		---	---	25	---	---	---	
Ti	ug/g	280	296	(2)	292 - 300	---	292 (1)	300 (1)	---	---	
U	ug/g	---	< 30		---	---	30	---	---	---	
V	ug/g	---	29.45	(2)	28.8 - 30.1	---	30.1 (1)	28.8 (1)	---	---	
Y	ug/g	---	7	(1)	---	---	7 (1)	---	---	---	
Yb	ng/g	---	1325	(2)	550 - 2100	---	1325 (2)	---	---	---	
Zn	ug/g	---	40.7	(1)	---	---	40.7 (1)	---	---	---	
Zr	ug/g	---	16	(1)	---	---	16 (1)	---	---	---	

TABLE 1B-2: INDIVIDUAL DATA FOR NBS SRM 1B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ug/g)</u>										
<	5	L	ICPES	81CHU 01		15.7	1		ICPES	81CHU 01
<u>Al (ug/g)</u>										
5660	200		ICPES	81CHU 01		5.5	1		ICPES	81CHU 01
5800			OES	73BES 01						
<u>As (ug/g)</u>										
<	5	L	ICPES	81CHU 01		0.9	0.03		ICPES	85JAR 02
<u>Au (ug/g)</u>										
<	3	L	ICPES	81CHU 01		570	20		ICPES	85JAR 02
<u>Ba (ug/g)</u>										
86	1.7		ICPES	81CHU 01		240	10		ICPES	85JAR 02
						1700	1200		ICPES	81CHU 01
<u>Be (ng/g)</u>										
420	50		ICPES	81CHU 01		1766			WXRF	82LEO 03
<u>Bi (ug/g)</u>										
<	25	L	ICPES	81CHU 01		5000			OES	73BES 01
						5460	140		ICPES	81CHU 01
<u>Ca (%)</u>										
35.93	1.19		ICPES	81CHU 01		5500			AA	84SCH 01
36.2			AA	84SCH 01						
36.8			OES	73BES 01						
<u>Cd (ng/g)</u>										
<	2000	L	ICPES	81CHU 01		<u>Gd (ug/g)</u>				
30	80		AA	83GOG 01						
52			IDMS	74ROS 02						
<u>Ce (ug/g)</u>										
<	15	L	ICPES	81CHU 01		<	5	L	ICPES	81CHU 01
7.81	0.48		ICPES	85JAR 02		0.97	0.05		ICPES	85JAR 02
<u>Cl (ug/g)</u>										
70			WXRF	82LEO 03		200	10		ICPES	85JAR 02
<u>Co (ug/g)</u>										
4.1	1		ICPES	81CHU 01		2000	50		ICPES	81CHU 01
						2200			AA	84SCH 01
<u>La (ug/g)</u>										
						<	5	L	ICPES	81CHU 01
						6.86	0.35		ICPES	85JAR 02

TABLE 1B-2: INDIVIDUAL DATA FOR NBS SRM 1B (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Li (ug/g)</u>										
<	2	L	ICPES	81CHU 01		100			CB	77LAN 01
192						192			WXRF	82LEO 03
<u>Lu (ng/g)</u>										
80	10		ICPES	85JAR 02		<u>Sb (ug/g)</u>				
<	10	L	ICPES	81CHU 01		<	10	L	ICPES	81CHU 01
<u>Mg (ug/g)</u>										
2000		AA		84SCH 01		<u>Se (ug/g)</u>				
2040	60	ICPES		81CHU 01						
2400		OES		73BES 01		<	30	L	ICPES	81CHU 01
<u>Mn (ug/g)</u>										
1430		OES		73BES 01		2.28	0.05		COLOR	81FON 01
1510	45	ICPES		81CHU 01		2.32			OES	73BES 01
1600		AA		84SCH 01		<u>Sm (ug/g)</u>				
<u>Mo (ug/g)</u>										
<	3	L	ICPES	81CHU 01		<	5	L	ICPES	81CHU 01
						0.89	0.04		ICPES	85JAR 02
<u>Na (ug/g)</u>										
260	15	ICPES		81CHU 01		<u>Sn (ug/g)</u>				
400		AA		84SCH 01						
<u>Nd (ug/g)</u>						<u>Sr (ug/g)</u>				
<	20	L	ICPES	81CHU 01		1100			AA	84SCH 01
4.88	0.09	ICPES		85JAR 02		1200			OES	75THO 01
						1208	24		ICPES	81CHU 01
<u>Ni (ug/g)</u>										
11	1	ICPES		81CHU 01		<u>Th (ug/g)</u>				
<u>P (ug/g)</u>						<u>Ti (ug/g)</u>				
370	9	ICPES		81CHU 01		292	6		ICPES	81CHU 01
						300			OES	73BES 01
<u>Pb (ug/g)</u>										
2	0.4	FAA		75CAM 02		<u>U (ug/g)</u>				
17	2	ICPES		81CHU 01						
						<	30	L	ICPES	81CHU 01
<u>Pr (ug/g)</u>										
1.18	0.03	ICPES		85JAR 02		28.8			OES	84PLS 01
						30.1	1.4		ICPES	81CHU 01

TABLE 1B-2: INDIVIDUAL DATA FOR NBS SRM 1B (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Y (ug/g)</u>					
7	0.34		ICPES	85JAR 02	
<u>Yb (ng/g)</u>					
550	20		ICPES	85JAR 02	
2100	100		ICPES	81CHU 01	
<u>Zn (ug/g)</u>					
40.7	2		ICPES	81CHU 01	
<u>Zr (ug/g)</u>					
16	1		ICPES	81CHU 01	

TABLE 1C-1: COMPILED DATA FOR NBS SRM 1C ARGILLACEOUS LIMESTONE (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	RANGE	NAA	ICPES	OTHER METHODS
		Mean ± SD	Mean (n)		Mean (n)	Mean (n)	Mean (n) Method
Al	ug/g	6880 ± 160	---	---	---	---	---
Ba	ug/g	---	84 (1)	---	84 (1)	---	---
Ca	%	35.96 ± 0.21	---	---	---	---	---
Cd	ng/g	---	400 (1)	---	---	400 (1)	---
Ce	ug/g	---	7.14 (2)	6.87 - 7.4	7.4 (1)	6.87 (1)	---
Co	ug/g	---	1.15 (1)	---	1.15 (1)	---	---
Cr	ug/g	---	19 (1)	---	19 (1)	---	---
Cs	ng/g	---	590 (1)	---	590 (1)	---	---
Dy	ng/g	---	640 (1)	---	---	640 (1)	---
Er	ng/g	---	410 (1)	---	---	410 (1)	---
Eu	ng/g	---	165 (2)	160 - 170	170 (1)	160 (1)	---
Fe	ug/g	3840 ± 210	3900 (1)	---	3900 (1)	---	---
Gd	ng/g	---	650 (1)	---	---	650 (1)	---
Hf	ng/g	---	750 (1)	---	750 (1)	---	---
Ho	ng/g	---	140 (1)	---	---	140 (1)	---
K	ug/g	2320 ± 80	---	---	---	---	---
LOI	%	39.9 ± 0.1	---	---	---	---	---
La	ug/g	---	4.63 (2)	4.26 - 5	5 (1)	4.26 (1)	---
Lu	ng/g	---	60 (2)	---	60 (1)	60 (1)	---
Mg	ug/g	2530 ± 240	---	---	---	---	---
Mn	ug/g	190 ± 40	---	---	---	---	---
Na	ug/g	150 ± 75	---	---	---	---	---
Nd	ug/g	---	3.72 (2)	3.7 - 3.73	3.7 (1)	3.73 (1)	---
P	ug/g	175 ± 44	165 (2)	160 - 170	---	170 (1)	160 (1) COLOR
Pr	ug/g	---	0.9 (1)	---	---	0.9 (1)	---
Rb	ug/g	---	12.5 (1)	---	12.5 (1)	---	---
Sc	ug/g	---	1.3 (1)	---	1.3 (1)	---	---
Si	%	3.19 ± 0.04	---	---	---	---	---
Sm	ng/g	---	730 (2)	---	730 (1)	730 (1)	---
Sr	ug/g	250 ± 40	---	---	---	---	---
Ta	ng/g	---	90 (1)	---	90 (1)	---	---
Tb	ng/g	---	130 (1)	---	130 (1)	---	---
Th	ug/g	---	1.02 (1)	---	1.02 (1)	---	---
Ti	ug/g	420 ± 60	---	---	---	---	---
Tm	ng/g	---	70 (1)	---	70 (1)	---	---
U	ug/g	---	1.5 (1)	---	1.5 (1)	---	---
Y	ug/g	---	5.05 (1)	---	---	5.05 (1)	---
Yb	ng/g	---	385 (2)	380 - 390	380 (1)	390 (1)	---

TABLE 1C-2: INDIVIDUAL DATA FOR NBS SRM 1C (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ba (ug/g)</u>									
84			ITNA	85POT 02	140	10		ICPES	85JAR 02
<u>Cd (ng/g)</u>									
400	< 38	500	FAA ICPES	83UCH 02 83POT 02	4.26 5	0.1		ICPES ITNA	85JAR 02 85POT 02
<u>Ce (ug/g)</u>									
6.87	0.14	7.4	ICPES ITNA	85JAR 02 85POT 02	60 60			ICPES ITNA	85JAR 02 85POT 02
<u>Co (ug/g)</u>									
1.15			ITNA	85POT 02	3.7 3.73	0.05		ITNA ICPES	85POT 02 85JAR 02
<u>Cr (ug/g)</u>									
19			ITNA	85POT 02	0.016 0.017	0.0002 0.0001		COLOR ICPES	83UCH 01 83UCH 01
<u>Cs (ng/g)</u>									
590			ITNA	85POT 02	<u>Pr (ug/g)</u>				
<u>Dy (ng/g)</u>									
640	10	410	ICPES	85JAR 02	0.9	0.02		ICPES	85JAR 02
<u>Er (ng/g)</u>									
160	20		ICPES	85JAR 02	12.5			ITNA	85POT 02
<u>Eu (ng/g)</u>									
170			ITNA	85POT 02	1.3			ITNA	85POT 02
<u>Fe (ug/g)</u>									
3900			ITNA	85POT 02	730 730	20		ITNA ICPES	85POT 02 85JAR 02
<u>Gd (ng/g)</u>									
650	10		ICPES	85JAR 02	90			ITNA	85POT 02
<u>Hf (ng/g)</u>									
750			ITNA	85POT 02	130			ITNA	85POT 02
<u>La (ug/g)</u>									
					1.02			ITNA	85POT 02
<u>Lu (ng/g)</u>									
<u>Nd (ug/g)</u>									
<u>P (%)</u>									
<u>Rb (ug/g)</u>									
<u>Sc (ug/g)</u>									
<u>Sm (ng/g)</u>									
<u>Ta (ng/g)</u>									
<u>Tb (ng/g)</u>									
<u>Th (ug/g)</u>									

TABLE 1C-2: INDIVIDUAL DATA FOR NBS SRM 1C (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Tm (ng/g)</u>					
70			ITNA	85POT 02	
<u>U (ug/g)</u>					
1.5			ITNA	85POT 02	
<u>Y (ug/g)</u>					
5.05	0.02		ICPES	85JAR 02	
<u>Yb (ng/g)</u>					
380			ITNA	85POT 02	
390	10		ICPES	85JAR 02	

TABLE 27F-1: COMPILED DATA FOR NBS SRM 27F SIBLEY IRON ORE  
 (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean ± SD	Mean	
Al	ug/g	4340 ± 160	---	---
Bi	ng/g	---	150 (1)	AA
Ca	ug/g	280 ± 20	---	---
Fe	%	65.97 ± 0.05	---	---
K	ug/g	66 ± 17	---	---
Mg	ug/g	115 ± 25	---	---
Mn	ug/g	85 ± 15	---	---
Na	ug/g	89 ± 22	---	---
P	ug/g	410 ± 10	---	---
S	ug/g	50 ± 10	---	---
Si	%	1.95 ± 0.02	---	---
Ti	ug/g	110 ± 11	---	---

TABLE 27F-2: INDIVIDUAL DATA FOR NBS SRM 27F  
 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Bi (ng/g)				
150			FAA	84TER 03

TABLE 28-1: COMPILED DATA FOR NBS SRM 28 NORRIE IRON ORE  
 (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean	Mean	
Mn	ug/g	4400	---	---

TABLE 56-1: COMPILED DATA FOR NBS SRM 56 PHOSPHATE ROCK  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		METHOD
			Mean		
Al	%	1.62	---	---	
Ca	%	32	---	---	
Fe	%	2.31	---	---	
P	%	13.66	---	---	
S	%	---	2.5 (1)	TURB	

TABLE 56-2: INDIVIDUAL DATA FOR NBS SRM 56  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (%)</u>				
2.5			TURB	73SHA 01

TABLE 56B-1: COMPILED DATA FOR NBS SRM 56B PHOSPHATE ROCK  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		METHOD
			Mean		
Ca	%	31.5	---	---	
F	%	3.4	3.32 (2)	ISE	
P	%	13.76	---	---	
Si	%	4.72	4.8 (1)	AA	

TABLE 56B-2: INDIVIDUAL DATA FOR NBS SRM 56B  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>F (%)</u>				
3.25		11	ISE	71PET 01
3.38		11	ISE	71PET 01
<u>Si (%)</u>				
4.8	0.05	AA	82KIS 01	

TABLE 69A-1: COMPILED DATA FOR NBS SRM 69A BAUXITE ORE (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		XRF		OTHER METHODS	
		Mean	Mean ± SD	(n)			Mean (n)	Mean ± SD	(n)	Mean (n)	Method	
Al	%	29.1	29.5 ± 0.4	(7)	29.2	29.17 - 30.20	29.2 (2)	29.68 ± 0.41	(4)	29.17 (1)	TITR	
As	ug/g	---	12.4	(2)	---	12.2 - 12.7	12.7 (1)	12.2	(1)	---		
Ba	ug/g	90	73	(1)	---	---	---	73	(1)	---		
Be	ng/g	---	200	(1)	---	---	200 (1)	---	---	---		
Bi	ng/g	---	668	(1)	---	---	668 (1)	---	---	---		
Ca	ug/g	2100	1980 ± 80	(5)	1900	1900 - 2100	1900 (1)	2000	(1)	1900 (1)	OES	
Ca	ug/g	---	---		---	---	---	---		2050 (2)	TITR	
Cd	ng/g	---	20	(1)	---	---	20 (1)	---	---	---		
Ce	ug/g	---	94	(1)	---	---	---	94	(1)	---		
Cl	ug/g	---	117	(1)	---	---	---	117	(1)	---		
Co	ug/g	---	3.5	(1)	---	---	---	3.5	(1)	---		
Cr	ug/g	340	270	(1)	---	---	---	---		270 (1)	OES	
Cu	ug/g	---	9	(1)	---	---	---	9	(1)	---		
Dy	ug/g	---	4.5	(1)	---	---	---	4.5	(1)	---		
F	ug/g	---	1490	(1)	---	---	---	1490	(1)	---		
Fe	%	4.07	3.99 ± 0.12	(6)	3.9	3.82 - 4.12	3.96 (1)	3.93 ± 0.14	(3)	4.12 (1)	OES	
Fe	%	---	---		---	---	---	---		4.07 (1)	TITR	
Ga	ug/g	---	119	(1)	---	---	---	119	(1)	---		
Gd	ug/g	---	3.2	(1)	---	---	---	3.2	(1)	---		
Hf	ug/g	---	33	(1)	---	---	---	33	(1)	---		
K	ug/g	< 80	75	(2)	---	70 - 80	---	75	(2)	---		
LOI	%	29.55	---		---	---	---	---		---		
La	ug/g	---	71	(1)	---	---	---	71	(1)	---		
Mg	ug/g	120	75	(2)	---	60 - 90	90 (1)	---		60 (1)	OES	
Mn	ug/g	< 80	23	(1)	---	---	---	23	(1)	---		
Na	ug/g	< 80	---		---	---	---	---		---		
Nb	ug/g	---	59	(1)	---	---	---	59	(1)	---		
Nd	ug/g	---	28	(1)	---	---	---	28	(1)	---		
P	ug/g	350	510	(2)	---	220 - 800	---	220	(1)	800 (1)	OES	
Pb	ug/g	---	34	(2)	---	31 - 37	30.8 (1)	37	(1)	---		
Pr	ug/g	---	5.4	(1)	---	---	---	5.4	(1)	---		
S	ug/g	160	300 ± 80	(4)	300	200 - 400	---	358	(2)	200 (1)	OES	
S	ug/g	---	---		---	---	---	---		300 (1)	TURB	
Sb	ug/g	---	2.0	(2)	---	1.0 - 3.1	1.0 (1)	3.1	(1)	---		
Sc	ug/g	---	8.9	(1)	---	---	---	8.9	(1)	---		
Si	%	2.81	2.82 ± 0.03	(5)	2.8	2.78 - 2.85	2.85 (2)	2.8 ± 0.02	(3)	---		
Sm	ug/g	---	5.1	(1)	---	---	---	5.1	(1)	---		
Sn	ug/g	---	8.2	(2)	---	8.0 - 8.5	8.51 (1)	8	(1)	---		
Sr	ug/g	---	49	(1)	---	---	---	49	(1)	---		
Th	ug/g	---	94	(1)	---	---	---	94	(1)	---		
Ti	%	1.66	1.62 ± 0.11	(7)	1.64	1.46 - 1.74	1.46 (2)	1.68 ± 0.04	(4)	1.7 (1)	OES	
U	ug/g	---	6.2	(1)	---	---	---	6.2	(1)	---		
V	ug/g	170	---		---	---	---	---		---		
Y	ug/g	---	16	(1)	---	---	---	16	(1)	---		
Zn	ug/g	---	11	(1)	---	---	---	11	(1)	---		
Zr	ug/g	1330	1285	(1)	---	---	---	1285	(1)	---		

TABLE 69A-2: INDIVIDUAL DATA FOR NBS SRM 69A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
29.17		TITR	58WAT	01	270		OES	78KNO	01
29.2		XRF	78KNO	01					
29.2	1.04	AA	79BRE	02	<u>Cu (ug/g)</u>				
29.2	1.04	AA	80LAB	03	9		XRF	76LEO	02
29.64		XRF	79SCH	02					
29.68	0.07	XRF	80LAB	03	<u>Dy (ug/g)</u>				
30.2		EXRF	80DAL	01	4.5		XRF	76LEO	02
<u>As (ug/g)</u>									
12.2		XRF	76LEO	02	<u>F (ug/g)</u>				
12.7		HAA	84TER	04	1490		WXRF	82LEO	03
<u>Ba (ug/g)</u>									
73		XRF	76LEO	02	<u>Fe (%)</u>				
					3.82	0.08	XRF	80LAB	03
<u>Be (ng/g)</u>									
					3.88		XRF	79SCH	02
					3.96	0.03	AA	80LAB	03
200		AA	82TER	02	4.07		TITR	69WIC	01
200	D	AA	83TER	01	4.09		EXRF	80DAL	01
					4.12		OES	78KNO	01
<u>Bi (ng/g)</u>									
668		HAA	84TER	02	<u>Ga (ug/g)</u>				
668	D	FAA	84TER	03	119		XRF	76LEO	02
<u>Ca (ug/g)</u>									
1100	11	AA	79MEN	01	3.2		XRF	76LEO	02
1900	11	AA	79MEN	01					
1900		OES	78KNO	01	<u>Hf (ug/g)</u>				
2000		TITR	80HIT	02	33		XRF	76LEO	02
2000		EXRF	80DAL	01					
2100		TITR	79MEN	01	<u>K (ug/g)</u>				
<u>Cd (ng/g)</u>									
20		AA	84TER	01	70		EXRF	80DAL	01
					80		XRF	78KNO	01
<u>Ce (ug/g)</u>									
94		XRF	76LEO	02	71		XRF	76LEO	02
<u>Cl (ug/g)</u>									
117		WXRF	82LEO	03	<u>La (ug/g)</u>				
					60		OES	78KNO	01
					90		AA	79MEN	01
<u>Co (ug/g)</u>									
3.5		XRF	76LEO	02					

TABLE 69A-2: INDIVIDUAL DATA FOR NBS SRM 69A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference							
<u>Mn (ug/g)</u>																	
23	< 100	L	OES	78KNO 01		5.1		XRF	76LEO 02								
EXRF																	
<u>Sn (ug/g)</u>																	
59			XRF	76LEO 02		8		XRF	76LEO 02								
<u>Nb (ug/g)</u>																	
28			XRF	76LEO 02		8.51	0.4	FAA	85TER 01								
<u>Nd (ug/g)</u>																	
<u>Sr (ug/g)</u>																	
28			XRF	76LEO 02		49		XRF	76LEO 02								
<u>P (ug/g)</u>																	
220			EXRF	80DAL 01		94		XRF	76LEO 02								
800			OES	78KNO 01		<u>Th (ug/g)</u>											
<u>Pb (ug/g)</u>																	
30.8			AA	84TER 01		1.32	0.11	COLOR	79BRE 01								
37			XRF	76LEO 02		1.46	0.14	AA	79BRE 01								
<u>Pr (ug/g)</u>																	
5.4			XRF	76LEO 02		1.46	0.14	AA	80LAB 03								
<u>Si (%)</u>																	
200			OES	78KNO 01		1.64	0.02	XRF	80LAB 03								
300			TURB	73SHA 01		1.66	0.01	XRF	79SCH 02								
317			WXRF	82LEO 03		1.66		XRF	79BRE 01								
400			EXRF	80DAL 01		1.7		OES	78KNO 01								
<u>S (ug/g)</u>																	
<u>U (ug/g)</u>																	
200			OES	78KNO 01		1.74		XRF	80DAL 01								
300			TURB	73SHA 01		<u>Y (ug/g)</u>											
317			WXRF	82LEO 03		16		XRF	76LEO 02								
400			EXRF	80DAL 01		<u>Zn (ug/g)</u>											
<u>Sb (ug/g)</u>																	
1			HAA	84TER 04		11		XRF	76LEO 02								
3.1			XRF	76LEO 02		<u>Zr (ug/g)</u>											
<u>Sc (ug/g)</u>																	
8.9			XRF	76LEO 02		1285		XRF	76LEO 02								
<u>Si (%)</u>																	
2.44			EXRF	80DAL 01													
2.78			XRF	78KNO 01													
2.8			XRF	79SCH 02													
2.82	0.04		XRF	80LAB 03													
2.85	0.08		AA	80LAB 03													
2.85	0.08		AA	79BRE 02													

TABLE 69B-1: COMPILED DATA FOR NBS SRM 69B BAUXITE ORE  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
Al	%	25.8 ± 0.1
Ba	ug/g	72
Ca	ug/g	.930 ± 140
Ce	ug/g	240
Co	ug/g	1
Cr	ug/g	75 ± 14
Fe	%	4.99 ± 0.08
Hf	ug/g	63
K	ug/g	560 ± 75
LOI	%	27.2 ± 0.2
Mg	ug/g	510 ± 50
Mn	ug/g	850 ± 40
Na	ug/g	180
P	ug/g	514 ± 17
S	ug/g	2500 ± 80
Sc	ug/g	8
Si	%	6.27 ± 0.05
Ti	%	1.14 ± 0.03
V	ug/g	160 ± 20
Zn	ug/g	28 ± 4
Zr	ug/g	2150 ± 520

TABLE 70-1: COMPILED DATA FOR NBS SRM 70 POTASH FELDSPAR (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		MEDIAN	RANGE	METHOD
			Mean	± SD (n)			
Al	%	9.54	---	---	---	---	---
Ba	ug/g	300	380	(1)	---	---	NAA
Ca	ug/g	500	---	---	---	---	---
Ce	ug/g	---	< 4	---	---	---	NAA
Co	ng/g	---	100	(1)	---	---	NAA
Cr	ug/g	---	< 2	---	---	---	NAA
Cs	ug/g	---	6.6	(1)	---	---	NAA
Eu	ng/g	---	400	(1)	---	---	NAA
Fe	ug/g	210	300	(1)	---	---	NAA
Hf	ng/g	---	< 200	---	---	---	NAA
Hg	ng/g	---	98	(1)	---	---	AA
K	%	10.44	---	---	---	---	---
LOI	%	0.22	---	---	---	---	---
La	ug/g	---	< 3	---	---	---	NAA
Lu	ng/g	---	< 40	---	---	---	NAA
Mg	ug/g	78	---	---	---	---	---
Mn	ug/g	7	---	---	---	---	---
Na	%	1.76	---	---	---	---	---
Nd	ug/g	---	< 3	---	---	---	NAA
P	ug/g	52	---	---	---	---	---
Rb	ug/g	---	470	(1)	---	---	NAA
Sb	ng/g	---	< 500	---	---	---	NAA
Sc	ng/g	---	40	(1)	---	---	NAA
Si	%	31.13	---	---	---	---	---
Sm	ng/g	---	< 500	---	---	---	NAA
Ta	ng/g	---	< 200	---	---	---	NAA
Tb	ng/g	---	< 200	---	---	---	NAA
Th	ng/g	---	< 400	---	---	---	NAA
Ti	ug/g	12	---	---	---	---	---
Yb	ng/g	---	< 300	---	---	---	NAA
Zn	ug/g	---	6.9 ± 0.8 (3)	7.3	6.0 - 7.5	---	NAA/XRF
Zr	ug/g	---	< 75	---	---	---	NAA

TABLE 70-2: INDIVIDUAL DATA FOR NBS SRM 70 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ba (ug/g)</u>									
380	17		ITNA	77FLA 01	<	500	L	ITNA	77FLA 01
<u>Ce (ug/g)</u>									
<	4	L	ITNA	77FLA 01	40	3		ITNA	77FLA 01
<u>Co (ng/g)</u>									
100			ITNA	77FLA 01	<	500	L	ITNA	77FLA 01
<u>Cr (ug/g)</u>									
<	2	L	ITNA	77FLA 01	<	200	L	ITNA	77FLA 01
<u>Cs (ug/g)</u>									
6.6	0.19		ITNA	77FLA 01	<	200	L	ITNA	77FLA 01
<u>Eu (ng/g)</u>									
400	10		ITNA	77FLA 01	<	400	L	ITNA	77FLA 01
<u>Fe (ug/g)</u>									
300			ITNA	77FLA 01	<	300	L	ITNA	77FLA 01
<u>Hf (ng/g)</u>									
<	200	L	ITNA	77FLA 01	6	0.71		ITNA	77FLA 01
<u>Hg (ng/g)</u>									
98	5.95		FAA	82FLA 01	7.3			RTNA	65BAL 01
<u>La (ug/g)</u>									
<	3	L	ITNA	77FLA 01	7.5			XRF	65BAL 01
<u>Lu (ng/g)</u>									
<	40	L	ITNA	77FLA 01	<u>Zr (ug/g)</u>				
<u>Nd (ug/g)</u>									
<	3	L	ITNA	77FLA 01	<	75	L	ITNA	77FLA 01
<u>Rb (ug/g)</u>									
470	26		ITNA	77FLA 01					

TABLE 70A-1: COMPILED DATA FOR NBS SRM 70A POTASH FELDSPAR (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	AA	NAA	OTHER METHODS	
		Mean	Mean ± SD (n)			Mean (n)	Mean (n)	Mean ± SD (n)	Method
Al	%	9.47	---	---	---	---	---	---	---
Ba	ug/g	180	121 (2)	---	120 - 122	---	120 (1)	121.9 (1)	IDMS
Be	ng/g	---	640 (1)	---	---	640 (1)	---	---	---
Bi	ng/g	---	68 (1)	---	---	68 (1)	---	---	---
C	ug/g	---	50 (1)	---	---	---	---	50 (1)	CB
Ca	ug/g	790	770 (2)	---	640 - 900	770 (2)	---	---	---
Cd	ng/g	---	8.7 (1)	---	---	---	---	8.7 (1)	IDMS
Ce	ug/g	---	< 4	---	---	---	< 4	---	---
Co	ng/g	---	200 (1)	---	---	---	200 (1)	---	---
Cr	ug/g	---	< 4	---	---	---	< 4	---	---
Cs	ug/g	---	9.64 (2)	---	9.28 - 10	10 (1)	9.28 (1)	---	---
Eu	ng/g	---	570 (1)	---	---	---	570 (1)	---	---
Fe	ug/g	520	600 ± 100 (3)	600	490 - 700	595 (2)	600 (1)	---	---
Hf	ng/g	---	< 300	---	---	---	< 300	---	---
Hg	ng/g	---	15 (1)	---	---	15 (1)	---	---	---
K	%	9.79	9.76 ± 0.07 (4)	9.71	9.71 - 9.85	9.82 (2)	---	9.71 (1)	ISE
K	%	---	---	---	---	---	---	9.71 (1)	FE
LOI	%	0.4	---	---	---	---	---	---	---
La	ug/g	---	< 2	---	---	---	< 2	---	---
Lu	ng/g	---	8.0 (1)	---	---	---	8.0 (1)	IDMS	
Na	%	1.87	1.86 ± 0.04 (5)	1.87	1.8 - 1.9	1.87 (2)	---	1.85 (1)	XRF
Na	%	---	---	---	---	---	---	1.9 (1)	FE
Na	%	---	---	---	---	---	---	1.8 (1)	ISE
Nd	ug/g	---	< 3	---	---	---	< 3	---	---
Rb	ug/g	550	525 ± 9 (9)	524.2	507 - 540	540 (1)	530 (1)	519 (2)	XRF
Rb	ug/g	---	---	---	---	---	---	524 ± 4 (4)	IDMS
Rb	ug/g	---	---	---	---	---	---	520.4 (1)	MS
S	ug/g	---	3.0 (1)	---	---	---	---	3.0 (1)	CB
Sb	ng/g	---	< 400	---	---	---	< 400	---	---
Sc	ng/g	---	110 (1)	---	---	---	110 (1)	---	---
Se	ug/g	---	66.1 (1)	---	---	---	---	66.1 (1)	XRF
Si	%	31.3	---	---	---	---	---	---	---
Sm	ng/g	---	< 200	---	---	---	< 200	---	---
Sn	ug/g	---	0.75 (1)	---	---	0.75 (1)	---	---	---
Sr	ug/g	---	64.7 ± 1.4 (6)	64.8	62.4 - 66.4	---	---	62.43 (1)	XRF
Sr	ug/g	---	---	---	---	---	---	64.8 (1)	MS
Sr	ug/g	---	---	---	---	---	---	65.2 ± 1.0 (4)	IDMS
Sr-87/86	ratio	---	1.2002 ± 0.0024 (3)	1.2002	1.1978 - 1.2025	---	---	1.2002 (1)	MS
Sr-87/86	ratio	---	---	---	---	---	---	1.2002 (2)	IDMS
Ta	ng/g	---	150 (1)	---	---	---	150 (1)	---	---
Tb	ng/g	---	< 200	---	---	---	< 200	---	---
Th	ng/g	---	300 (1)	---	---	---	300 (1)	---	---
Ti	ug/g	60	---	---	---	---	---	---	---
Tl	ug/g	---	2.81 (2)	---	2.72 - 2.91	---	---	2.81 (2)	ASV
Yb	ng/g	---	< 500	---	---	---	< 500	---	---
Zn	ug/g	---	< 5	---	---	---	< 5	---	---
Zr	ug/g	---	< 90	---	---	---	< 90	---	---

TABLE 70A-2: INDIVIDUAL DATA FOR NBS SRM 70A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ba (ug/g)</u>									
120	5		ITNA	77FLA 01		<	300	L	ITNA
121.9			IDMS	69LAE 01					77FLA 01
<u>Be (ng/g)</u>									
640		AA		83TER 01	15		1.03	FAA	82FLA 01
<u>Bi (ng/g)</u>									
68		FAA		84TER 03	9.71			FE	75PUF 01
<u>C (ug/g)</u>									
50		CB		78TER 01	9.71			ISE	75PUF 01
<u>Ca (ug/g)</u>									
640		AA		73RAM 01	9.79			AA	73RAM 01
900		AA		84SCH 01	9.85			AA	84SCH 01
<u>Cd (ng/g)</u>									
8.7		IDMS		74ROS 02	La (ug/g)				
<u>Ce (ug/g)</u>									
<	4	L	ITNA	77FLA 01	Lu (ng/g)				
<u>Co (ng/g)</u>									
200		ITNA		77FLA 01	Na (%)				
<u>Cr (ug/g)</u>									
<	4	L	ITNA	77FLA 01	Nd (ug/g)				
<u>Cs (ug/g)</u>									
9.28	0.15	ITNA		77FLA 01	Rb (ug/g)				
10		AA		72ALL 01	507.4			WXRF	83VAL 01
<u>Eu (ng/g)</u>									
570	10	ITNA		77FLA 01	519.1			IDMS	82KRA 01
<u>Fe (ug/g)</u>									
490		AA		73RAM 01	520.4			MS	84ZIC 01
600		ITNA		77FLA 01	523.4			IDMS	70LAE 01
700		AA		84SCH 01	524.2	1.5		IDMS	74COR 01
					529.8	1.6		IDMS	69COM 01
					529.9	1		XRF	69COM 01
					530	15		ITNA	77FLA 01
					540			AA	72ALL 01
					S (ug/g)				
					3			CB	78TER 01

TABLE 70A-2: INDIVIDUAL DATA FOR NBS SRM 70A (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u><b>Sb (ng/g)</b></u>									
< 400	L	ITNA	77FLA	01	< 500	L	ITNA	77FLA	01
<u><b>Sc (ng/g)</b></u>									
110	3	ITNA	77FLA	01	< 5	L	ITNA	77FLA	01
<u><b>Se (ug/g)</b></u>									
66.1	0.2	XRF	69COM	01	< 90	L	ITNA	77FLA	01
<u><b>Sm (ng/g)</b></u>									
< 200	L	ITNA	77FLA	01					
<u><b>Sn (ug/g)</b></u>									
0.75		AA	82TER	01					
<u><b>Sr (ug/g)</b></u>									
62.43		WXRF	83VAL	01					
64	0.4	IDMS	74COR	01					
64.8		MS	84ZIC	01					
65.1	0.1	IDMS	69COM	01					
65.5		IDMS	82KRA	01					
66.4		IDMS	70LAE	01					
<u><b>Sr-87/86 (ratio)</b></u>									
1.1978	0.0033	IDMS	74COR	01					
1.2002		MS	84ZIC	01					
1.2025	0.0012	IDMS	69COM	01					
<u><b>Ta (ng/g)</b></u>									
150	8	ITNA	77FLA	01					
<u><b>Tb (ng/g)</b></u>									
< 200	L	ITNA	77FLA	01					
<u><b>Th (ng/g)</b></u>									
300		ITNA	77FLA	01					
<u><b>Tl (ug/g)</b></u>									
2.715	0.217	7	ASV	82CAL	01				
2.906	0.25	7	ASV	82CAL	01				

TABLE 76-1: COMPILED DATA FOR NBS SRM 76 BURNT REFRACTORY (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	RANGE	XRF	OTHER METHODS
		Mean	Mean (n)		Mean (n)	Mean (n) Method
Al	%	19.93	20.05 (1)	---	20.05 (1)	---
Ca	ug/g	1930	1600 (1)	---	1600 (1)	---
Fe	%	1.66	1.53 (2)	1.47 - 1.59	1.59 (1)	1.47 (1) COLOR
K	%	1.28	1.29 (1)	---	1.29 (1)	---
LOI	%	0.22	---	---	---	---
Li	ug/g	510	---	---	---	---
Mg	ug/g	3500	2800 (1)	---	2800 (1)	---
Mn	ug/g	---	230 (1)	---	230 (1)	---
Na	ug/g	1100	---	---	---	---
P	ug/g	300	---	---	---	---
Si	%	25.53	25.76 (1)	---	25.76 (1)	---
Sr	ug/g	---	85 (1)	---	85 (1)	---
Ti	%	1.32	1.34 (1)	---	1.34 (1)	---
V	ug/g	120	---	---	---	---
Zr	ug/g	520	---	---	---	---

TABLE 77-1: COMPILED DATA FOR NBS SRM 77 BURNT REFRACTORY (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	RANGE	XRF	OTHER METHODS
		Mean	Mean (n)		Mean (n)	Mean (n) Method
Al	%	27.73	31.02 (2)	30.63 - 31.4	31.02 (2)	---
Ca	ug/g	1860	1400 (1)	---	1400 (1)	---
Fe	ug/g	6290	5450 (2)	5200 - 5700	5200 (1)	5700 (1) COLOR
K	%	1.75	1.79 (1)	---	1.79 (1)	---
LOI	%	0.21	---	---	---	---
Li	ug/g	1630	---	---	---	---
Mg	ug/g	3000	2200 (1)	---	2200 (1)	---
Mn	ug/g	---	80 (1)	---	80 (1)	---
Na	ug/g	440	---	---	---	---
P	ug/g	1960	---	---	---	---
Si	%	15.12	15.32 (2)	15.3 - 15.34	15.32 (2)	---
Sr	ug/g	---	1200 (1)	---	1200 (1)	---
Ti	%	1.76	1.82 (1)	---	1.82 (1)	---
V	ug/g	180	---	---	---	---
Zr	ug/g	670	---	---	---	---

TABLE 78-1: COMPILED DATA FOR NBS SRM 78 BURNT REFRACTORY (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	RANGE	XRF	OTHER METHODS
		Mean	Mean (n)		Mean (n)	Mean (n) Method
Al	%	---	36.84 (1)	---	---	36.84 (1) TITR
Fe	ug/g	---	5000 (1)	---	---	5000 (1) COLOR
Li	ug/g	930	---	---	---	---
Na	ug/g	440	---	---	---	---

TABLE 76-2: INDIVIDUAL DATA FOR NBS SRM 76  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>				
20.05		WXRF	67KOD 01	
<u>Ca (ug/g)</u>				
1600		WXRF	67KOD 01	
<u>Fe (%)</u>				
1.47	0.01	COLOR	59COL 01	
1.59		WXRF	67KOD 01	
<u>K (%)</u>				
1.29		WXRF	67KOD 01	
<u>Mg (ug/g)</u>				
2800		WXRF	67KOD 01	
<u>Mn (ug/g)</u>				
230		WXRF	67KOD 01	
<u>Si (%)</u>				
25.76		WXRF	67KOD 01	
<u>Sr (ug/g)</u>				
85		WXRF	67KOD 01	
<u>Ti (%)</u>				
1.34		WXRF	67KOD 01	

TABLE 77-2: INDIVIDUAL DATA FOR NBS SRM 77  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>				
30.63		WXRF	67KOD 01	
31.4		XRF	72ASH 01	
<u>Ca (ug/g)</u>				
1400		WXRF	67KOD 01	
<u>Fe (ug/g)</u>				
5200		WXRF	67KOD 01	
5700	100	COLOR	59COL 01	
<u>K (%)</u>				
1.79		WXRF	67KOD 01	
<u>Mg (ug/g)</u>				
2200		WXRF	67KOD 01	
<u>Mn (ug/g)</u>				
80		WXRF	67KOD 01	
<u>Si (%)</u>				
15.3		XRF	72ASH 01	
15.34		WXRF	67KOD 01	
<u>Sr (ug/g)</u>				
1200		WXRF	67KOD 01	
<u>Ti (%)</u>				
1.82		WXRF	67KOD 01	

TABLE 78-2: INDIVIDUAL DATA FOR NBS SRM 78 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>				
36.84		TITR	58WAT 01	
<u>Fe (ug/g)</u>				
5000	100	COLOR	59COL 01	

TABLE 76A-1: COMPILED DATA FOR NBS SRMs 76A-78A BURNT REFRACTORIES  
(revised 3/1/86)

ELEMENT	UNITS	76A	77A	78A
Al	%	20.47	31.84	37.92
Ca	ug/g	1570	360	790
Fe	%	1.12	0.699	0.840
K	%	1.10	0.075	1.01
LOI	%	0.34	0.22	0.42
Li	ug/g	200	120	560
Mg	ug/g	3140	2290	4220
Na	ug/g	520	275	580
P	ug/g	520	400	5700
Si	%	25.63	16.34	9.06
Sr	ug/g	310	75	2120
Ti	%	1.22	1.59	1.93

TABLE 79A-1: COMPILED DATA FOR NBS SRM 79A FLUORSPAR  
(revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean ± SD	Mean	
Ca	%	49.99 ± 0.03	---	---
CaF <sub>2</sub>	%	97.39 ± 0.06	---	---
F	%	47.40 ± 0.03	---	---
Si	ug/g	3130	---	---
U	ng/g	---	210 (1)	NAA

TABLE 80-1: COMPILED DATA FOR NBS SRM 80 SODA-LIME GLASS  
(revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean	Mean	
Al	ug/g	1750	---	---
As	ug/g	690	---	---
As(III)	ug/g	230	---	---
As(V)	ug/g	460	---	---
Ca	%	3.32	3.2 (1)	TITR
Cl	ug/g	470	---	---
Fe	ug/g	450	---	---
K	ug/g	330	---	---
LOI	%	0.3	---	---
Mg	%	1.95	1.93 (1)	TITR
Mn	ug/g	23	---	---
Na	%	12.35	---	---
S	ug/g	1640	---	---
Si	%	34.6	---	---
Ti	ug/g	120	---	---
Zr	ug/g	22	---	---

TABLE 79A-2: INDIVIDUAL DATA FOR NBS SRM 79A  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>U (ng/g)</u>				
210	30	DNA	86GAU 01	

TABLE 80-2: INDIVIDUAL DATA FOR NBS SRM 80  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Ca (%)</u>				
3.2		TITR	80HIT 02	
<u>Mg (%)</u>				
1.93		TITR	80HIT 02	

TABLE 88-1: COMPILED DATA FOR NBS SRM 88 DOLOMITIC LIMESTONE (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		MEDIAN	RANGE	OTHER METHODS	
			Mean ± SD (n)	(n)			Mean ± SD (n)	method
Al	ug/g	350	---	---	---	---	---	
C-Inorg	%	12.9	12.93 ± 0.06 (3)		12.90	12.90 - 13.00	12.93 ± 0.06 (3)	COUL
C-Org	ug/g	800	---	---	---	---	---	
Ca	%	21.8	21.81	(1)	---	---	21.81	(1) TITR
Co	ug/g	---	0.7	(1)	---	---	0.7	(1) NAA
Cr	ug/g	---	3.9	(1)	---	---	3.9	(1) NAA
Fe	ug/g	590	580	(1)	---	---	580	(1) COLOR
H	ug/g	80	---	---	---	---	---	
K	ug/g	250	---	---	---	---	---	
LOI	%	47.52	---	---	---	---	---	
Mg	%	12.95	---	---	---	---	---	
Mn	ug/g	50	---	---	---	---	---	
Na	ug/g	590	---	---	---	---	---	
P	ug/g	13	---	---	---	---	---	
S	ug/g	130	287 ± 15	(3)	290	270 - 300	300	(1) TURB
S	ug/g	---	---	---	---	---	280	(2) CB
Si	ug/g	1450	---	---	---	---	---	
Sr	ug/g	< 85	57.5	(2)	---	55 - 60	60	(1) NAA
Sr	ug/g	---	---	---	---	---	55	(1) OES
Ti	ug/g	30	182	(2)	---	24 - 340	24	(1) NAA
Ti	ug/g	---	---	---	---	---	340	(1) COLOR

TABLE 88B-1: COMPILED DATA FOR NBS SRM 88B DOLOMITIC LIMESTONE  
(revised 3/1/86)

ELEMENT	UNITS	NBS	
		Mean	± SD
Al	ug/g	1778	± 69
C-Inorg	%	12.66	± 0.03
Ca	%	21.53	± 0.36
Fe	ug/g	1937	± 14
H2O-	%	0.24	
K	ug/g	855	± 20
LOI	%	46.98	
Mg	%	12.68	± 0.04
Mn	ug/g	124	± 9
Na	ug/g	215	± 5
P	ug/g	19	± 1
Si	ug/g	5282	± 93
Sr	ug/g	64	± 3
Ti	ug/g	96	

TABLE 88-2: INDIVIDUAL DATA FOR NBS SRM 88 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>C-Inorg (%)</u>											
12.9	0.42	41	COUL	86CAH	01						
12.9047	0.0109	41	COUL	85ENG	01						
13.0003	0.1556	41	COUL	85ENG	01						
<u>Ca (%)</u>											
21.81	0.03		TITR	80HIT	02						
<u>Co (ug/g)</u>											
0.7	0.6		RTNA	61TUR	01						
<u>Cr (ug/g)</u>											
3.9			RTNA	61TUR	01						
<u>Fe (ug/g)</u>											
						580	10		COLOR	59COL	01
<u>S (ug/g)</u>											
						270			CB	55COL	01
						290			CB	77LAN	01
						300			TURB	73SHA	01
<u>Sr (ug/g)</u>											
						55			OES	58GRA	01
						60			RTNA	61TUR	01
<u>Ti (ug/g)</u>											
						24	4		RTNA	65WAH	01
						340			COLOR	63KOR	01

TABLE 88A-1: COMPILED DATA FOR NBS SRM 88A DOLOMITIC LIMESTONE (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	NAA Mean (n)	ICPES Mean (n)	XRF Mean (n)	OTHER METHODS Mean (n) method
			Mean ± SD (n)	Median					
Ag	ug/g	---	< 3	---	---	---	< 3	---	---
Al	ug/g	1000	600 (2)	---	300 - 900	---	900 (1)	300 (1)	---
As	ug/g	---	< 5	---	---	---	< 5	---	---
Au	ug/g	---	< 3	---	---	---	< 3	---	---
Ba	ug/g	---	18 ± 8 (3)	14	13 - 28	14 (1)	13 (1)	28 (1)	---
Be	ng/g	---	180 (1)	---	---	---	180 (1)	---	---
Bi	ug/g	---	< 25	---	---	---	< 25	---	---
C-Inorg	%	12.72	12.79 (2)	---	12.75 - 12.83	---	---	12.79 (2)	CB
Ca	%	21.56	21.73 (2)	---	20.96 - 22.5	---	20.96 (1)	22.5 (1)	---
Cd	ug/g	---	< 2	---	---	---	< 2	---	---
Ce	ug/g	---	3.3 ± 1.3 (3)	2.7	2.46 - 4.8	2.7 (1)	2.46 (1)	4.8 (1)	---
Cl	ug/g	---	113 (1)	---	---	---	---	113 (1)	---
Co	ug/g	---	2.3 ± 1.6 (3)	3	0.5 - 3.4	0.5 (1)	3 (1)	3.4 (1)	---
Cr	ug/g	---	6.95 (2)	---	2.2 - 11.7	2.2 (1)	11.7 (1)	---	---
Cu	ug/g	---	6.95 (2)	---	2.5 - 11.4	---	2.5 (1)	11.4 (1)	---
Dy	ng/g	---	270 (1)	---	---	---	270 (1)	---	---
Er	ng/g	---	180 (1)	---	---	---	180 (1)	---	---
Eu	ng/g	---	450 ± 650 (3)	620	70 - 1200	70 (1)	635 (2)	---	---
F	ug/g	---	500 (1)	---	---	---	---	500 (1)	---
Fe	ug/g	1960	2090 ± 90 (3)	2050	2030 - 2200	2030 (1)	2050 (1)	2200 (1)	---
Gd	ug/g	---	1.86 (2)	---	0.32 - 3.4	---	1.86 (2)	---	---
Hf	ng/g	---	180 (1)	---	---	180 (1)	---	---	---
Hg	ng/g	---	28.2 (1)	---	---	---	---	28.2 (1)	AA
Ho	ng/g	---	60 (1)	---	---	---	60 (1)	---	---
K	ug/g	1000	850 (2)	---	700 - 1000	---	1000 (1)	700 (1)	---
LoI	%	46.7	---	---	---	---	---	---	---
La	ug/g	---	1.7 ± 0.4 (3)	1.6	1.44 - 2.2	1.6 (1)	1.44 (1)	2.2 (1)	---
Li	ug/g	---	< 2	---	---	---	< 2	---	---
Lu	ng/g	---	30 (2)	---	30 - 30	30 (1)	30 (1)	---	---

TABLE 88A-1: COMPILED DATA FOR NBS SRM 88A: Dolomitic Limestone (cont.)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)		RANGE	NAA Mean (n)	ICPES Mean (n)	XRF Mean (n)	OTHER METHODS Mean (n) method
			Median	NAA Mean (n)					
Mg	%	12.84	13.03 (2)	---	13 - 13.06	---	13.06 (1)	13 (1)	---
Mn	ug/g	230	180 (2)	---	150 - 210	---	210 (1)	150 (1)	---
Mo	ug/g	---	< 3	---	---	---	< 3	---	---
Na	ug/g	74	127 (2)	---	104 - 150	150 (1)	104 (1)	---	---
Nd	ug/g	---	1.33 (2)	---	1.26 - 1.4	1.4 (1)	1.26 (1)	---	---
Ni	ug/g	---	< 3	---	---	---	< 3	---	---
P	ug/g	44	145 (2)	---	70 - 220	---	70 (1)	220 (1)	---
Pb	ug/g	---	15 (2)	---	3 - 27	---	27 (1)	3 (1)	---
Pr	ng/g	---	310 (1)	---	---	---	310 (1)	---	---
Rb	ug/g	---	2 (1)	---	2 (1)	---	---	---	---
S	ug/g	---	34 ± 39 (3)	71.7	4 - 78	---	---	78 (1)	12.5 (2) CB
Sb	ug/g	---	< 10	---	---	---	< 10	---	---
Sc	ng/g	---	300 (1)	---	---	300 (1)	---	---	---
Se	ug/g	---	< 30	---	---	---	< 30	---	---
Si	ug/g	5600	4100 (1)	---	---	---	4100 (1)	---	---
Sm	ng/g	---	290 (2)	---	280 - 300	300 (1)	280 (1)	---	---
Sn	ug/g	---	2.1 (1)	---	---	---	---	2.1 (1)	---
Sr	ug/g	85	59 ± 32 (3)	41	41 - 96	---	41 (1)	41 (1)	96 (1) OES
Ta	ng/g	---	30 (1)	---	---	30 (1)	---	---	---
Tb	ng/g	---	50 (1)	---	---	50 (1)	---	---	---
Th	ng/g	---	190 (1)	---	---	190 (1)	---	---	---
Ti	ug/g	120	123 (2)	---	66 - 180	---	66 (1)	180 (1)	---
U	ng/g	---	300 (1)	---	---	300 (1)	---	---	---
V	ug/g	---	5.6 (2)	---	2.2 - 9	---	9 (1)	---	2.2 (1) OES
Y	ug/g	---	2.23 (2)	---	2.16 - 2.3	---	2.16 (1)	2.3 (1)	---
Yb	ng/g	---	510 ± 600 (3)	170	150 - 1200	150 (1)	685 (2)	---	---
Zn	ug/g	---	3.45 (2)	---	2.8 - 4.1	---	4.1 (1)	2.8 (1)	---
Zr	ug/g	6.6	(1)	---	---	---	6.6 (1)	6.6 (1)	---

TABLE 88A-2: INDIVIDUAL DATA FOR NBS SRM 88A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ug/g)</u>										
<	3	L	ICPES	81CHU 01		113		WXRF	82LEO 03	
<u>Al (ug/g)</u>										
300			EXRF	80DAL 01		0.5		ITNA	85POT 02	
900	30		ICPES	81CHU 01		3	1	ICPES	81CHU 01	
						3.4		XRF	76LEO 02	
<u>As (ug/g)</u>										
<	5	L	ICPES	81CHU 01		2.2		ITNA	85POT 02	
<u>Au (ug/g)</u>										
<	3	L	ICPES	81CHU 01		11.7	1	ICPES	81CHU 01	
<u>Ba (ug/g)</u>										
13	0.26		ICPES	81CHU 01		2.5	1	ICPES	81CHU 01	
14			ITNA	85POT 02		11.4		XRF	76LEO 02	
28			XRF	76LEO 02						
<u>Be (ng/g)</u>										
180	20		ICPES	81CHU 01		270	10	ICPES	85JAR 02	
<u>Bi (ug/g)</u>										
<	25	L	ICPES	81CHU 01		180	10	ICPES	85JAR 02	
<u>C-Inorg (%)</u>										
12.75	0.02		CB	80ANO 01		70		ITNA	85POT 02	
12.83			CB	78TER 01		70	10	ICPES	85JAR 02	
						1200	600	ICPES	81CHU 01	
<u>Ca (%)</u>										
20.96	0.69		ICPES	81CHU 01		500		WXRF	82LEO 03	
22.5			EXRF	80DAL 01						
<u>Cd (ug/g)</u>										
<	2	L	ICPES	81CHU 01		2030		ITNA	85POT 02	
2.46	0.27		ICPES	85JAR 02		2050	40	ICPES	81CHU 01	
2.7			ITNA	85POT 02		2200		EXRF	80DAL 01	
4.8			XRF	76LEO 02						
<u>Ce (ug/g)</u>										
<	15	L	ICPES	81CHU 01		0.32	0.02	ICPES	85JAR 02	
2.46			ICPES	85JAR 02		3.4	0.35	ICPES	81CHU 01	
2.7			ITNA	85POT 02						
4.8			XRF	76LEO 02						
<u>Cl (ug/g)</u>										
						180		ITNA	85POT 02	
<u>Co (ug/g)</u>										
<u>Cr (ug/g)</u>										
<u>Cu (ug/g)</u>										
<u>Dy (ng/g)</u>										
<u>Er (ng/g)</u>										
<u>Eu (ng/g)</u>										
<u>F (ug/g)</u>										
<u>Fe (ug/g)</u>										
<u>Gd (ug/g)</u>										
<u>Hf (ng/g)</u>										

TABLE 88A-2: INDIVIDUAL DATA FOR NBS SRM 88A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Hg (ng/g)</u>										
28.2	0.68		FAA	82FLA 01		<	3	L	ICPES	81CHU 01
<u>Ho (ng/g)</u>										
60	10		ICPES	85JAR 02		70	4		ICPES	81CHU 01
<u>K (ug/g)</u>										
700			EXRF	80DAL 01		220			EXRF	80DAL 01
1000	25		ICPES	81CHU 01		3			XRF	76LEO 02
<u>La (ug/g)</u>										
<	5	L	ICPES	81CHU 01		27	3		ICPES	81CHU 01
1.44	0.16		ICPES	85JAR 02		310	20		ICPES	85JAR 02
1.6			ITNA	85POT 02						
2.2			XRF	76LEO 02						
<u>Li (ug/g)</u>										
<	2	L	ICPES	81CHU 01		2			ITNA	85POT 02
<u>Lu (ng/g)</u>										
30			ITNA	85POT 02		4			CB	78TER 01
30	10		ICPES	85JAR 02		21			CB	77LAN 01
<u>Mg (%)</u>										
13			EXRF	80DAL 01		78			WXRF	82LEO 03
13.06	0.4		ICPES	81CHU 01						
<u>Mn (ug/g)</u>										
150			EXRF	80DAL 01		300			ITNA	85POT 02
210	6.3		ICPES	81CHU 01						
<u>Mo (ug/g)</u>										
<	3	L	ICPES	81CHU 01		<	30	L	ICPES	81CHU 01
<u>Na (ug/g)</u>										
104	7		ICPES	81CHU 01		4100			EXRF	80DAL 01
150			ITNA	85POT 02		280	10		ICPES	85JAR 02
<u>Nd (ug/g)</u>										
<	20	L	ICPES	81CHU 01		300			ITNA	85POT 02
1.26	0.11		ICPES	85JAR 02						
1.4			ITNA	85POT 02		<	3	L	ICPES	81CHU 01
						2.1			XRF	76LEO 02

TABLE 88A-2: INDIVIDUAL DATA FOR NBS SRM 88A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u><b>Sr (ug/g)</b></u>										
41			XRF	76LEO 02						
41	0.8		ICPES	81CHU 01						
96			OES	75THO 01						
<u><b>Ta (ng/g)</b></u>										
30			ITNA	85POT 02						
<u><b>Tb (ng/g)</b></u>										
50			ITNA	85POT 02						
<u><b>Th (ng/g)</b></u>										
< 25000	L		ICPES	81CHU 01						
190			ITNA	85POT 02						
<u><b>Ti (ug/g)</b></u>										
66	2		ICPES	81CHU 01						
180			EXRF	80DAL 01						
<u><b>U (ng/g)</b></u>										
			< 25000	L		ICPES	81CHU 01			
			300			ITNA	85POT 02			
<u><b>V (ug/g)</b></u>										
			2.2			OES	84PLS 01			
			9	1		ICPES	81CHU 01			
<u><b>Y (ug/g)</b></u>										
			2.16			ICPES	85JAR 02			
			2.3			XRF	76LEO 02			
<u><b>Yb (ng/g)</b></u>										
			150			ITNA	85POT 02			
			170	10		ICPES	85JAR 02			
			1200	40		ICPES	81CHU 01			
<u><b>Zn (ug/g)</b></u>										
			2.8			XRF	76LEO 02			
			4.1	1		ICPES	81CHU 01			
<u><b>Zr (ug/g)</b></u>										
			< 1	L		ICPES	81CHU 01			
			6.6			XRF	76LEO 02			

TABLE 91-1: COMPILED DATA FOR NBS SRM 91 OPAL GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	AA Mean (n)	NAA Mean (n)	OES Mean (n)	OTHER METHODS	
			Mean ± SD (n)	Median					Mean ± SD (n)	Method
Al	%	2.81	3.21 (1)	---	---	---	---	---	3.21 (1)	TCGS
As <sub>2</sub> O <sub>3</sub>	ug/g	910	---	---	---	---	---	---	---	---
As <sub>2</sub> O <sub>3</sub>	ug/g	1020	---	---	---	---	---	---	---	---
B	ug/g	---	302 (1)	---	---	---	---	302 (1)	---	---
Ba	ug/g	---	79 (1)	---	---	---	---	79 (1)	---	---
Ca	%	7.49	7.56 (2)	7.54 - 7.58	7.58 (1)	---	---	---	7.54 (1)	TCGS
Cl	ug/g	140	167 (1)	---	---	---	---	---	167 (1)	COLOR
Co	ug/g	---	4.5 (1)	---	---	---	---	4.5 (1)	---	---
Cr	ug/g	---	26 (2)	26 - 26	---	---	---	26 (2)	---	---
Cu	ug/g	---	16 (1)	---	---	---	---	16 (1)	---	---
F	%	5.73	5.58 ± 0.23 (11)	5.62	5.1 - 5.81	---	5.39 (2)	---	5.67 ± 0.08 (6)	ISE
F	%	---	---	---	---	---	---	---	5.0 (2)	IC
F	%	---	---	---	---	---	---	---	5.7 (1)	CPAA
Fe	ug/g	570	2200 ± 2200 (5)	700	430 - 5200	700 (1)	600 (1)	430 (1)	5.81 (1)	COLOR
Fe	ug/g	---	---	---	---	---	---	4000 (1)	4000 (1)	TCGS
Ga	ug/g	---	12 (1)	---	---	---	---	5200 (1)	5200 (1)	COLOR
K	%	2.7	2.7 (2)	2.68 - 2.72	2.72 (1)	---	---	---	2.68 (1)	TCGS
Mg	ug/g	---	60 (1)	---	---	---	---	60 (1)	60 (1)	TCGS
Mn	ug/g	---	51 (2)	---	39 - 63	---	---	51 (2)	---	---
Na	%	6.29	6.26 ± 0.06 (3)	6.23	6.22 - 6.32	6.22 (1)	6.23 (1)	---	6.32 (1)	TCGS
Ni	ug/g	---	3.4 ? (2)	0.79 - 6	---	0.79 (1)	0.79 (1)	6 (1)	---	---
O	%	---	49.0 (1)	---	---	---	---	49.0 (1)	49.0 (1)	14NAA
P	ug/g	96	---	---	---	---	---	---	---	---
Pb	ug/g	900	580 ? (2)	---	17 - 1150	---	---	580 (2)	---	---
Si	%	31.54	31.9 ± 0.4 (3)	32.1	31.5 - 32.2	31.5 (1)	32.2 (1)	---	32.1 (1)	TCGS
Sr	ug/g	---	39 (1)	---	---	---	---	39 (1)	---	---
Ti	ug/g	110	135 ± 23 (3)	140	110 - 156	---	---	148 (2)	110 (1)	TCGS
U	ng/g	---	625 (2)	---	540 - 710	---	625 (2)	---	---	---
V	ug/g	---	43 (1)	---	---	---	---	43 (1)	---	---
Zn	ug/g	640	700 (1)	---	---	700 (1)	---	---	---	---
Zr	ug/g	70	47 (1)	---	---	---	47 (1)	---	---	---

TABLE 91-2: INDIVIDUAL DATA FOR NBS SRM 91 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>										
3.21	35	TCGS	78GLA	04		430		OES	64FIL	01
<u>B (ug/g)</u>										
302		OES	64FIL	01		600	35	IENA	79GLA	03
<u>Ba (ug/g)</u>										
79		OES	72AVN	01		700		AA	84SCH	01
<u>Ca (%)</u>										
7.54	35	TCGS	78GLA	04		4000	35	TCGS	78GLA	04
7.58		AA	84SCH	01		5200	100	COLOR	59COL	01
<u>Cl (ug/g)</u>										
167	25	COLOR	85WHI	01		12		OES	72AVN	01
<u>Co (ug/g)</u>										
4.5		OES	72AVN	01		2.68	35	TCGS	78GLA	04
<u>Cr (ug/g)</u>										
26		OES	64FIL	01		2.72		AA	84SCH	01
26		OES	72AVN	01				IENA	79GLA	03
<u>Cu (ug/g)</u>										
16		OES	72AVN	01		6.32	35	TCGS	78GLA	04
<u>F (%)</u>										
4.9	0.1	IC	83KEN	04		0.79	35	IENA	79GLA	03
5.1		IC	82WIL	02		6		OES	72AVN	01
5.16	35	IENA	79GLA	03		<u>O (%)</u>				
5.55	0.09	ISE	85WHI	01		49	0.6	14NAA	80NOR	01
5.6	0.16	11	ISE	77HOP	01					
5.62	0.08	NAA	80NOR	01		<u>Pb (ug/g)</u>				
5.68	0.15	ISE	77TRO	01		17		OES	64FIL	01
5.7	11	ISE	77HOP	01		1150		OES	72AVN	01
5.7	0.07	CPAA	84HAN	01						
5.72		ISE	70ING	01		<u>Si (%)</u>				
5.75	0.003	ISE	71PET	01		31.5	1.21	AA	82KIS	0
5.81	0.21	COLOR	83CHA	02		32.1	35	TCGS	78GLA	04
						32.2	35	IENA	79GLA	03

TABLE 91-2: INDIVIDUAL DATA FOR NBS SRM 91 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u><b>Sr (ug/g)</b></u>									
39			OES	72AVN 01					
<u><b>U (ng/g)</b></u>									
					540		DNA	66HAM 01	
<u><b>Ti (ug/g)</b></u>									
<	350	L	IENA	79GLA 03					
110		35	TCGS	78GLA 04					
140			OES	72AVN 01			V (ug/g)		
156			OES	64FIL 01			43	OES	72AVN 01
<u><b>Zn (ug/g)</b></u>									
					700		AA	84SCH 01	
<u><b>Zr (ug/g)</b></u>									
					47		OES	64FIL 01	

TABLE 92-1: COMPILED DATA FOR NBS SRM 92 SODA-LIME GLASS  
 (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean ± SD	Mean (n)	
B	ug/g	2180 ± 90	---	---
Ca	%	5.9	5.88 (1)	MPOES
K	ug/g	5000	4810 (1)	MPOES
LOI	%	0.42	---	---
Mg	ug/g	600	---	---
Na	%	9.72	9.65 (1)	MPOES
Si	%	35	---	---
Zn	ug/g	1600	---	---

TABLE 93-1: COMPILED DATA FOR NBS SRM 93 BOROSILICATE GLASS  
 (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean	Mean (n)	
Fe	ug/g	---	550 (1)	COLOR
Si	%	---	37.86 (1)	AA

TABLE 93A-1: COMPILED DATA FOR NBS SRM 93A: Borosilicate Glass  
 (revised 3/1/86)

ELEMENT	UNITS	NBS
		Mean
Al	%	1.21
B	%	3.9
Ca	ug/g	70
Cl	ug/g	600
Fe	ug/g	200
K	ug/g	120
Mg	ug/g	30
Na	%	2.95
Si	%	37.7
Ti	ug/g	84
Zr	ug/g	310

TABLE 92-2: INDIVIDUAL DATA FOR NBS SRM 92  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>Ca (%)</u>				
<hr/>				
5.88			MPOES	85ZHA 01
<hr/>				
<u>K (ug/g)</u>				
<hr/>				
4810			MPOES	85ZHA 01
<hr/>				
<u>Na (%)</u>				
<hr/>				
9.65			MPOES	85ZHA 01

TABLE 93-2: INDIVIDUAL DATA FOR NBS SRM 93  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>Fe (ug/g)</u>				
<hr/>				
550	10		COLOR	59COL 01
<hr/>				
<u>Si (%)</u>				
<hr/>				
37.86	0.84	AA		82KIS 01

TABLE 97-1: COMPILED DATA FOR NBS SRM 97 FLINT CLAY (revised 3/1/86)

ELE	UNITS	NBS Mean	CONSENSUS		MEDIAN		RANGE		NAA Mean (n)	OTHER METHODS		
			Mean ± SD	(n)						Mean (n) Method	Mean (n) Method	
Al	%	18.1	20.49 ± 0.02 (3)		20.5		20.47 - 20.51		---	20.47 (1) COLOR	20.5 (1) TITR	
Al	%	---	---		---		---		---	---	20.51 (1) CHEM	
B	ug/g	---	64	(2)	---		57 - 71.3		---	---	64.2 (2) OES	
Ba	ug/g	130	170 ± 80 (3)		141		110 - 270		270 (1)	126 (2) OES	---	
Be	ug/g	---	1.3	(1)	---		---		---	---	1.3 (1) OES	
C	ug/g	---	3200	(1)	---		---		---	---	3200 (1) CB	
Ca	ug/g	720	---		---		---		---	---	---	
Ce	ug/g	---	58.8	(2)	---		57 - 60.7		57 (1)	60.7 (1) OES	---	
Co	ug/g	---	3.7 ± 0.6 (3)		3.46		3.3 - 4.4		3.85 (2)	3.46 (1) OES	---	
Cr	ug/g	540	550 ± 60 (6)		540		486 - 639		578 (2)	486 (1) OES	639 (1) AA	
Cr	ug/g	---	---		---		---		---	500 (1) COLOR	540 (1) CHEM	
Cs	ug/g	---	2.4	(1)	---		---		2.4 (1)	---	---	
Cu	ug/g	24	18 ± 5 (4)		18.5		11 - 22		---	14.8 (2) OES	20 (1) CHEM	
Cu	ug/g	---	---		---		---		---	---	22 (1) COLOR	
Dy	ug/g	---	4.28	(1)	---		---		---	---	4.28 (1) OES	
Eu	ug/g	---	1.4	(2)	---		1.24 - 1.56		1.24 (1)	1.56 (1) OES	---	
Fe	ug/g	6850	6660 ± 130 (5)		6600		6500 - 6800		6600 (1)	6800 (1) TITR	6550 (2) COLOR	
Fe	ug/g	---	---		---		---		---	6800 (1) CHEM	---	
Ga	ug/g	---	45.1	(1)	---		---		---	---	45.1 (1) OES	
Hf	ug/g	---	39.5	(1)	---		---		39.5 (1)	---	---	
Hg	ng/g	---	110	(2)	---		68 - 159.2		---	110 (2) AA	---	
K	ug/g	4500	---		---		---		---	---	---	
LOI	%	13.35	---		---		---		---	---	---	
La	ug/g	---	34	(1)	---		---		34 (1)	---	---	
Li	ug/g	1070	1074	(1)	---		---		---	---	1074 (1) OES	
Lu	ug/g	---	0.96	(1)	---		---		0.96 (1)	---	---	
Mg	%	0.157	0.145	(2)	---		0.13 - 0.16		---	0.16 (1) CHEM	0.13 (1) COLOR	
Mn	ug/g	15	50 ± 44	(3)	35		16 - 99.7		---	67 (2) OES	16 (1) CHEM	
Mo	ug/g	1.3	2.0	(1)	---		---		---	---	2.0 (1) CHEM	
Na	ug/g	520	---		---		---		---	---	---	
Nb	ug/g	---	35.6	(1)	---		---		---	---	35.6 (1) OES	
Nd	ug/g	---	19	(1)	---		---		---	19 (1) OES	---	
Ni	ug/g	---	34.4	(2)	---		32 - 36.8		---	34.4 (2) OES	---	
P	ug/g	350	---		---		---		---	---	---	
Pb	ug/g	---	34.6	(2)	---		34.3 - 35		---	34.3 (1) OES	35 (1) AA	
Rb	ug/g	---	24	(1)	---		---		24 (1)	---	---	
S	ug/g	170	176 ± 22	(3)	170		158 - 200		---	200 (1) TURB	164 (2) CB	
Sb	ug/g	---	1.4	(1)	---		---		1.4 (1)	---	---	
Sc	ug/g	---	16.4	(2)	---		12.1 - 20.7		20.7 (1)	12.1 (1) OES	---	
Si	%	20.02	20.0	(1)	---		---		---	20 (1) TITR	---	
Sm	ug/g	---	5.8	(1)	---		---		5.8 (1)	---	---	
Sn	ug/g	---	8.6	(2)	---		7 - 10.1		---	8.55 (2) OES	---	
Sr	ug/g	---	73 ± 38	(3)	88		30 - 101		30 (1)	94.5 (2) OES	---	
Ta	ug/g	---	4.2	(1)	---		---		4.2 (1)	---	---	
Tb	ug/g	---	1.27	(1)	---		---		1.27 (1)	---	---	
Th	ug/g	---	37	(1)	---		---		37 (1)	---	---	
Ti	%	1.42	1.39 ± 0.08	(3)	1.43		1.3 - 1.43		---	1.3 (1) COLOR	1.43 (1) CHEM	
Ti	%	---	---		---		---		---	1.43 (1) TITR	---	
V	ug/g	225	240 ± 90	(4)	205		148 - 362		---	255 (2) OES	205 (1) COLOR	
V	ug/g	---	---		---		---		---	234 (1) CHEM	---	
Y	ug/g	---	35.3	(2)	---		33 - 37.6		---	35.3 (2) OES	---	
Yb	ug/g	---	7.1	(2)	---		6.8 - 7.47		6.8 (1)	7.47 (1) OES	---	
Zn	ug/g	---	92	(2)	---		81 - 103		103 (1)	81 (1) XRF	---	
Zr	ug/g	1850	1390	(1)	---		---		1390 (1)	---	---	

TABLE 97-2: INDIVIDUAL DATA FOR NBS SRM 97 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>					<u>Cu (ug/g)</u>				
20.47			COLOR	57SHI 01	11		OES	64FIL 01	
20.5	0.03		TITR	84DAS 01	18.5		OES	77FLA 01	
20.51			CHEM	57SHI 01	20		CHEM	57SHI 01	
					22		COLOR	57SHI 01	
<u>B (ug/g)</u>					<u>Dy (ug/g)</u>				
57		OES	64FIL 01						
71.3		OES	77FLA 01		4.28		OES	77FLA 01	
<u>Ba (ug/g)</u>					<u>Eu (ug/g)</u>				
110		OES	77FLA 01		1.24	0.03	ITNA	77FLA 01	
141		OES	58GRA 01		1.56		OES	77FLA 01	
270	21	ITNA	77FLA 01						
<u>Be (ug/g)</u>					<u>Fe (ug/g)</u>				
1.3		OES	77FLA 01		6500	100	COLOR	59COL 01	
					6600		COLOR	57SHI 01	
<u>C (ug/g)</u>					6600	100	ITNA	77FLA 01	
3200		CB	78TER 01		6800		CHEM	57SHI 01	
					6800	600	TITR	84DAS 01	
<u>Ce (ug/g)</u>					<u>Ga (ug/g)</u>				
57	29	ITNA	77FLA 01		45.1		OES	77FLA 01	
60.7		OES	77FLA 01						
<u>Co (ug/g)</u>					<u>Hf (ug/g)</u>				
3.3	0.06	ITNA	77FLA 01		39.5	1.19	ITNA	77FLA 01	
3.46		OES	77FLA 01						
4.4		RTNA	61TUR 01		68		FAA	75HEI 01	
<u>Cr (ug/g)</u>					159.2	6.22	FAA	82FLA 01	
486		OES	77FLA 01						
500		COLOR	57SHI 01						
540		CHEM	57SHI 01						
576	14.4	ITNA	77FLA 01						
581		RTNA	61TUR 01						
639		AA	80DON 01						
<u>Cs (ug/g)</u>					1074		OES	77FLA 01	
2.4	0.08	ITNA	77FLA 01						
<u>La (ug/g)</u>					<u>Lu (ug/g)</u>				
					0.96	0.02	ITNA	77FLA 01	

TABLE 97-2: INDIVIDUAL DATA FOR NBS SRM 97 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mg (%)</u>									
0.13		COLOR	57SHI	01	20			TITR	770HL 01
0.16		CHEM	57SHI	01					
<u>Mn (ug/g)</u>									
16		CHEM	57SHI	01	5.8	< 4.64	L	OES	77FLA 01
35		OES	64FIL	01	.	0.08		ITNA	77FLA 01
99.7		OES	77FLA	01					
<u>Mo (ug/g)</u>									
2		CHEM	57SHI	01	7			OES	64FIL 01
					10.1			OES	77FLA 01
<u>Nb (ug/g)</u>									
35.6		OES	77FLA	01	30			RTNA	61TUR 01
					88			OES	58GRA 01
					101			OES	77FLA 01
<u>Nd (ug/g)</u>									
19		ITNA	77FLA	01	4.2	0.09		ITNA	77FLA 01
<u>Ni (ug/g)</u>									
32		OES	64FIL	01	1.27	0.02		ITNA	77FLA 01
36.8		OES	77FLA	01					
<u>Pb (ug/g)</u>									
34.3		OES	77FLA	01	37	0.48		ITNA	77FLA 01
35		FAA	79HEI	03					
<u>Rb (ug/g)</u>									
24	1.6	ITNA	77FLA	01	1.3			COLOR	57SHI 01
					1.43			CHEM	57SHI 01
					1.43	0.03		TITR	84DAS 01
<u>S (ug/g)</u>									
158		CB	78TER	01	148			OES	64FIL 01
170		CB	55COL	01	205			COLOR	57SHI 01
200		TURB	73SHA	01	234			CHEM	57SHI 01
					362			OES	77FLA 01
<u>Sb (ug/g)</u>									
1.4	0.11	ITNA	77FLA	01					
<u>Sc (ug/g)</u>									
12.1		OES	77FLA	01	33			OES	64FIL 01
20.7	0.17	ITNA	77FLA	01	37.6			OES	77FLA 01

TABLE 97-2: INDIVIDUAL DATA FOR NBS SRM 97 (cont.)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>Yb (ug/g)</u>				
6.8	0.17		ITNA	77FLA 01
7.47			OES	77FLA 01
<hr/>				
<u>Zn (ug/g)</u>				
81			XRF	65BAL 01
103	3.15		ITNA	77FLA 01
<hr/>				
<u>Zr (ug/g)</u>				
1390	34.8		ITNA	77FLA 01

TABLE 97A-1: COMPILED DATA FOR NBS SRM 97A FLINT CLAY (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS			RANGE	NAA	OTHER METHODS			
		Mean	Mean ± SD	(n)		Mean (n)	Mean (n) Method	Mean (n) Method			
Al	%	20.52	20.84	(1)	---	20.84 (1)	---	---	---	---	
As	ug/g	---	3.53	(1)	---	---	3.53 (1) AA	---	---	---	
B	ug/g	---	69.4	(1)	---	---	69.4 (1) OES	---	---	---	
Ba	ug/g	670	660	(1)	---	660 (1)	---	---	---	---	
Be	ug/g	---	3.4	(2)	3.2 - 3.55	---	3.55 (1) OES	3.2 (1) AA	---	---	
Bi	ng/g	---	733	(1)	---	---	---	733 (1) AA	---	---	
C	ug/g	---	600	(1)	---	---	---	600 (1) CB	---	---	
Ca	ug/g	790	---	---	---	---	---	---	---	---	
Cd	ng/g	---	16	(1)	---	---	---	16 (1) AA	---	---	
Ce	ug/g	---	160	(2)	124 - 203	203 (1)	124 (1) OES	---	---	---	
Co	ug/g	---	4.4	(2)	4.1 - 4.64	4.1 (1)	4.64 (1) OES	---	---	---	
Cr	ug/g	200	190	(2)	180 - 203	180 (1)	203 (1) OES	---	---	---	
Cs	ug/g	---	1.6	(1)	---	1.6 (1)	---	---	---	---	
Cu	ug/g	---	24.9	(1)	---	---	24.9 (1) OES	---	---	---	
Dy	ug/g	---	8.89	(1)	---	---	8.89 (1) OES	---	---	---	
Eu	ug/g	---	3.74	(2)	3.66 - 3.81	3.81 (1)	3.66 (1) OES	---	---	---	
Fe	ug/g	3140	3000	(1)	---	3000 (1)	---	---	---	---	
Ga	ug/g	---	31.6	(1)	---	---	31.6 (1) OES	---	---	---	
Hf	ug/g	---	13.4	(2)	11.3 - 15.4	13.35 (2)	---	---	---	---	
Hg	ng/g	---	388	(1)	---	---	---	388 (1) AA	---	---	
K	ug/g	4150	---	---	---	---	---	---	---	---	
LOI	%	13.32	---	---	---	---	---	---	---	---	
La	ug/g	---	73	(2)	43.7 - 103	103 (1)	43.7 (1) OES	---	---	---	
Li	ug/g	510	439	(1)	---	---	439 (1) OES	---	---	---	
Lu	ug/g	---	0.98	(1)	---	0.98 (1)	---	---	---	---	
Mg	ug/g	900	---	---	---	---	---	---	---	---	
Mn	ug/g	---	5.24	(1)	---	---	5.24 (1) OES	---	---	---	
Na	ug/g	275	---	---	---	---	---	---	---	---	
Nb	ug/g	---	39	(1)	---	---	39 (1) OES	---	---	---	
Nd	ug/g	---	88	(1)	---	88 (1)	---	---	---	---	
Ni	ug/g	---	81	(1)	---	---	81 (1) OES	---	---	---	
P	ug/g	1570	845 ?	(2)	160 - 1530	---	160 (1) ICPES	1530 (1) COLOR	---	---	
Pb	ug/g	---	40.15	(2)	38.6 - 41.7	---	41.7 (1) OES	38.6 (1) AA	---	---	
Rb	ug/g	---	< 20	---	---	< 20	---	---	---	---	
S	ug/g	---	308	(1)	---	---	---	308 (1) CB	---	---	
Sb	ng/g	---	800	(2)	800 - 800	800 (1)	---	800 (1) AA	---	---	
Sc	ug/g	---	26	(2)	21.3 - 31.3	31.3 (1)	21.3 (1) OES	---	---	---	
Si	%	20.39	20.7	(1)	---	20.7 (1)	---	---	---	---	
Sm	ug/g	---	14	(2)	6.88 - 21.3	21.3 (1)	6.88 (1) OES	---	---	---	
Sn	ug/g	---	6.5 ± 0.4	(3)	6.16 - 6.9	---	6.53 (1) OES	6.53 (2) AA	---	---	
Sr	ug/g	1500	860	(1)	---	---	860 (1) OES	---	---	---	
Ta	ug/g	---	3.21	(1)	---	3.21 (1)	---	---	---	---	
Tb	ug/g	---	2.77	(1)	---	2.77 (1)	---	---	---	---	
Th	ug/g	---	31.1	(1)	---	31.1 (1)	---	---	---	---	
Ti	%	1.14	---	---	---	---	---	---	---	---	
U	ug/g	---	6.58	(1)	---	6.58 (1)	---	---	---	---	
V	ug/g	---	362	(1)	---	---	362 (1) OES	---	---	---	
Y	ug/g	---	121	(1)	---	---	121 (1) OES	---	---	---	
Yb	ug/g	---	8.9	(2)	7.7 - 10.1	7.7 (1)	10.1 (1) OES	---	---	---	
Zn	ug/g	---	< 20	---	---	< 20	---	---	---	---	
Zr	ug/g	470	522	(2)	465 - 580	522 (2)	---	---	---	---	

TABLE 97A-2: INDIVIDUAL DATA FOR NBS SRM 97A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
20.84	2	IENA	84CEL 01		1.6	0.6	ITNA	77FLA 01	
<u>As (ug/g)</u>									
3.53		HAA	84TER 04		24.9		OES	77FLA 01	
<u>B (ug/g)</u>									
69.4		OES	77FLA 01		8.89		OES	77FLA 01	
<u>Ba (ug/g)</u>									
660	20.6	ITNA	77FLA 01		3.66		OES	77FLA 01	
					3.81	0.02	ITNA	77FLA 01	
<u>Be (ug/g)</u>									
3.2		AA	82TER 02		<u>Fe (ug/g)</u>				
3.2	D	AA	83TER 01		3000	30	ITNA	77FLA 01	
3.55		OES	77FLA 01		<u>Ga (ug/g)</u>				
					31.6		OES	77FLA 01	
<u>Bi (ng/g)</u>									
733	D	FAA	84TER 03		<u>Hf (ug/g)</u>				
733		HAA	84TER 02		11.3	0.39	ITNA	77FLA 01	
					15.4		RTNA	76GAN 01	
<u>C (ug/g)</u>									
600		CB	78TER 01		<u>Hg (ng/g)</u>				
					387.5	22.5	FAA	82FLA 01	
<u>Cd (ng/g)</u>									
< 200		ICPES	83UCH 02		<u>La (ug/g)</u>				
16		AA	84TER 01		43.7		OES	77FLA 01	
					103	1.83	ITNA	77FLA 01	
<u>Ce (ug/g)</u>									
124		OES	77FLA 01		<u>Li (ug/g)</u>				
203	3.51	ITNA	77FLA 01		439		OES	77FLA 01	
					<u>Lu (ug/g)</u>				
<u>Co (ug/g)</u>									
4.1	0.08	ITNA	77FLA 01		0.98	0.04	ITNA	77FLA 01	
4.64		OES	77FLA 01		<u>Mn (ug/g)</u>				
					5.24		OES	77FLA 01	
<u>Cr (ug/g)</u>									
180	4.1	ITNA	77FLA 01						
203		OES	77FLA 01						

TABLE 97A-2: INDIVIDUAL DATA FOR NBS SRM 97A (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Nb (ug/g)</u>									
39			OES	77FLA 01	6.16			AA	82TER 01
<u>Nd (ug/g)</u>									
88	3.7		ITNA	77FLA 01	6.53			OES	77FLA 01
<u>Ni (ug/g)</u>									
81			OES	77FLA 01	6.9	0.28		FAA	85TER 01
<u>P (%)</u>									
0.016	0.0001		ICPES	83UCH 01	<u>Sr (ug/g)</u>				
0.153	0.001		COLOR	83UCH 01	860			OES	77FLA 01
<u>Pb (ug/g)</u>									
38.6			AA	84TER 01	<u>Ta (ug/g)</u>				
41.7			OES	77FLA 01	3.21	0.06		ITNA	77FLA 01
<u>Rb (ug/g)</u>									
<	20	L	ITNA	77FLA 01	<u>Tb (ug/g)</u>				
<u>S (ug/g)</u>									
308			CB	78TER 01	2.77	0.08		ITNA	77FLA 01
<u>Sb (ng/g)</u>									
800			HAA	84TER 04	<u>Th (ug/g)</u>				
800	100		ITNA	77FLA 01	31.1	0.37		ITNA	77FLA 01
<u>Sc (ug/g)</u>									
21.3			OES	77FLA 01	<u>U (ug/g)</u>				
31.3	0.75		ITNA	77FLA 01	6.58			RTNA	76GAN 01
<u>Si (%)</u>									
20.7	1		IENA	84CEL 01	<u>V (ug/g)</u>				
<u>Sm (ug/g)</u>									
6.88			OES	77FLA 01	362			OES	77FLA 01
21.3	0.69		ITNA	77FLA 01	<u>Y (ug/g)</u>				
<u>Yb (ug/g)</u>									
7.7					121			OES	77FLA 01
<u>Zn (ug/g)</u>									
<	20	L			7.7	0.23		ITNA	77FLA 01
<u>Zr (ug/g)</u>									
10.1					<	20	L	ITNA	77FLA 01
<u>Sm (ug/g)</u>									
465					465	19		RTNA	76GAN 01
580					580	21		ITNA	77FLA 01

TABLE 98-1: COMPILED DATA FOR NBS SRM 98 PLASTIC CLAY (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	NAA Mean (n)	OES Mean ± SD (n)	OTHER METHODS	
			Mean ± SD (n)	Median				Mean (n)	Mean (n) Method
Al	%	13.51	13.53 ± 0.07 (5)	13.5	13.48 - 13.65	---	13.5 (1)	13.50 (2)	CHEM
Al	%	---	---	---	---	---	---	13.65 (1)	COLOR
Al	%	---	---	---	---	---	---	13.48 (1)	TITR
B	ug/g	---	140 ± 80 (4)	78.5	68 - 250	---	140 ± 80 (4)	---	
Ba	ug/g	---	680 ± 115 (3)	670	570 - 800	670 (1)	685 (2)	---	
Be	ug/g	---	4.1 (1)	---	---	---	4.1 (1)	---	
C	ug/g	---	4000 (1)	---	---	---	---	4000 (1)	CB
Ca	ug/g	1500	1530 ± 60 (3)	1500	1500 - 1600	---	1500 (1)	1600 (1)	TITR
Ca	ug/g	---	---	---	---	---	---	1500 (1)	CHEM
Ce	ug/g	---	127 (2)	---	119 - 135	135 (1)	119 (1)	---	
Co	ug/g	---	15.8 ± 1.4 (5)	16.5	13.8 - 17	15.2 (2)	16.3 ± 1.1 (3)	---	
Cr	ug/g	140	138 ± 18 (8)	136	113 - 170	122 (2)	135 ± 16 (3)	170 (1)	COLOR
Cr	ug/g	---	---	---	---	---	---	144 (1)	CHEM
Cr	ug/g	---	---	---	---	---	---	143 (1)	AA
Cs	ug/g	---	10.7 (1)	---	---	10.7 (1)	---	---	
Cu	ug/g	72	64 ± 24 (6)	70	33.7 - 100	---	60 ± 30 (4)	70 (1)	COLOR
Cu	ug/g	---	---	---	---	---	---	72 (1)	CHEM
Dy	ug/g	---	7.07 (1)	---	---	---	7.07 (1)	---	
Eu	ug/g	---	1.90 (2)	---	1.74 - 2.07	1.74 (1)	2.07 (1)	---	
Fe	%	1.43	1.32 ± 0.13 (6)	1.38	1.12 - 1.43	1.4 (1)	1.17 (1)	1.39 (2)	COLOR
Fe	%	---	---	---	---	---	---	1.28 (2)	CHEM
Ga	ug/g	---	52 (2)	---	24.1 - 80	---	52 (2)	---	
Hf	ug/g	---	7 (1)	---	---	7 (1)	---	---	
Hg	ng/g	---	463 (1)	---	---	---	---	463 (1)	AA
K	%	2.63	---	---	---	---	---	---	
LoI	%	7.28	---	---	---	---	---	---	
La	ug/g	---	95 ± 50 (3)	79	55.2 - 150	79 (1)	103 (2)	---	
Li	ug/g	140	144 (1)	---	---	---	144 (1)	---	
Lu	ng/g	---	650 (1)	---	---	650 (1)	---	---	

TABLE 98-1: COMPILED DATA FOR NBS SRM 98 PLASTIC CLAY (cont.)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	NAA Mean (n)	OES Mean ± SD (n)	OTHER METHODS	
			Mean ± SD (n)	Median				Mean (n)	Mean (n) Method
Mg	ug/g	4340	4300 ± 190 (5)	4300	4100 - 4600	---	4200 (1)	4300 (2)	CHEM
Mg	ug/g	---	---	---	---	---	---	4100 (1)	TITR
Mg	ug/g	---	---	---	---	---	---	4600 (1)	COLOR
Mn	ug/g	39	69 ± 33 (6)	58.8	39 - 100	---	84 ± 30 (4)	39.5 (2)	CHEM
Mo	ug/g	---	1.0 (1)	---	---	---	---	1.0 (1)	CHEM
Na	ug/g	1930	---	---	---	---	---	---	---
Nd	ug/g	---	4.9 (1)	---	---	49 (1)	---	---	---
Ni	ug/g	---	44 ± 8 (3)	40	39 - 52.8	---	44 ± 8 (3)	---	---
P	ug/g	350	370 (2)	---	350 - 390	---	---	370 (2)	COLOR
Pb	ug/g	---	44 (2)	---	40 - 47.5	---	44 (2)	---	---
Rb	ug/g	---	154 (1)	---	---	154 (1)	---	---	---
S	ug/g	280	270 ± 25 (3)	270	250 - 300	---	---	260 (2)	CB
S	ug/g	---	---	---	---	---	---	300 (1)	TURB
Sb	ug/g	---	1.3 (1)	---	---	1.3 (1)	---	---	---
Sc	ug/g	---	25 ± 4 (3)	27.09	22.1 - 30	22.9 (1)	26 (2)	---	---
Se	ug/g	---	1.20 ± 0.16 (3)	1.2	1.04 - 1.37	---	---	1.04 (1)	FLUOR
Si	%	27.6	27.60 ± 0.01 (3)	27.6	27.59 - 27.6	---	27.6 (1)	27.6 (1)	CHEM
Si	%	---	---	---	---	---	---	27.59 (1)	TITR
Sm	ug/g	---	8.3 (2)	---	6.3 - 10.3	10.3 (1)	6.3 (1)	---	---
Sn	ug/g	---	6.47 (1)	---	---	---	6.47 (1)	---	---
Sr	ug/g	---	290 ± 70 (5)	300	205 - 390	205 (1)	310 ± 70 (4)	---	---
Ta	ug/g	---	2.22 (1)	---	---	2.22 (1)	---	---	---
Tb	ug/g	---	1.35 (1)	---	---	1.35 (1)	---	---	---
Th	ug/g	---	19.5 (1)	---	---	19.5 (1)	---	---	---
Ti	ug/g	8560	9000 ± 600 (6)	8690	8400 - 10000	---	9200 ± 700 (3)	9300 (1)	COLOR
Ti	ug/g	---	---	---	---	---	---	8500 (2)	CHEM
V	ug/g	140	180 ± 80 (8)	140	106 - 310	---	210 ± 100 (5)	140 (2)	CHEM
V	ug/g	---	---	---	---	---	---	161 (1)	COLOR
Y	ug/g	---	38 ± 9 (3)	40	28 - 46.7	---	38 ± 9 (3)	---	---
Yb	ug/g	---	11 ± 9 (3)	6.8	4.9 - 21.2	4.9 (1)	14 (2)	---	---
Zn	ug/g	---	125 (1)	---	---	125 (1)	---	---	---
Zr	ug/g	300	300 ± 60 (6)	300	190 - 377	340 (1)	280 ± 80 (4)	300 (1)	CHEM

TABLE 98-2: INDIVIDUAL DATA FOR NBS SRM 98 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>										
13.48			TITR	58WAT 01		113		2.33	ITNA	77FLA 01
13.5			CHEM	62JOE 01		119			OES	64FIL 01
13.5			OES	62JOE 01		130			RTNA	61TUR 01
13.51			CHEM	57SHI 01		136			OES	77FLA 01
13.65			COLOR	57SHI 01		143			AA	80DON 01
						144			CHEM	57SHI 01
<u>B (ug/g)</u>										
68			OES	64FIL 01		150		3	OES	63CLA 01
78.5			OES	77FLA 01		170			COLOR	57SHI 01
150	3	OES	63CLA 01			250		3	OES	63CLA 01
250	3	OES	63CLA 01			1400			CHEM	62JOE 01
						1600			OES	62JOE 01
<u>Ba (ug/g)</u>										
570			OES	58GRA 01		10.7	0.17		ITNA	77FLA 01
670	10.8		ITNA	77FLA 01		<u>Cu (ug/g)</u>				
800			OES	63CLA 01		33.7			OES	77FLA 01
<u>Be (ug/g)</u>										
4.1			OES	77FLA 01		39			OES	64FIL 01
<u>C (ug/g)</u>										
4000			CB	78TER 01		70	3		OES	63CLA 01
<u>Ca (ug/g)</u>										
1500			OES	62JOE 01		70			COLOR	57SHI 01
1500			CHEM	62JOE 01		72			CHEM	57SHI 01
1600			TITR	80HIT 02		100	3		OES	63CLA 01
<u>Ce (ug/g)</u>										
119			OES	77FLA 01		<u>Dy (ug/g)</u>				
135	1.32		ITNA	77FLA 01		7.07			OES	77FLA 01
<u>Co (ug/g)</u>										
13.8	0.1		ITNA	77FLA 01		<u>Eu (ug/g)</u>				
15			OES	63CLA 01		1.74	0.02		ITNA	77FLA 01
16.5			RTNA	61TUR 01		2.07			OES	77FLA 01
16.9			OES	77FLA 01		<u>Fe (%)</u>				
17			OES	64FIL 01		1.12			CHEM	62JOE 01
<u>Ga (ug/g)</u>										
						1.17			OES	62JOE 01
						1.38	0.01		COLOR	59COL 01
						1.4			COLOR	57SHI 01
						1.4	0.05		ITNA	77FLA 01
						1.43			CHEM	57SHI 01
						<u>&lt; 100</u>				
						24.1			OES	77FLA 01
						80	3		OES	63CLA 01

TABLE 98-2: INDIVIDUAL DATA FOR NBS SRM 98 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Hf (ug/g)</u>									
7	0.42		ITNA	77FLA 01	350		11	COLOR	76WHI 01
390					390		11	COLOR	76WHI 01
<u>Hg (ng/g)</u>									
462.6	12.1		FAA	82FLA 01	40		OES	63CLA 01	
47.5					47.5		OES	77FLA 01	
<u>La (ug/g)</u>									
55.2			OES	77FLA 01	154	1.12	ITNA	77FLA 01	
79	1.7		ITNA	77FLA 01	250		CB	78TER 01	
150			OES	63CLA 01	270		CB	55COL 01	
300					TURB			73SHA 01	
<u>Li (ug/g)</u>									
144			OES	77FLA 01	1.3	0.12	ITNA	77FLA 01	
<u>Lu (ng/g)</u>									
650			ITNA	77FLA 01	1.3				
<u>Mg (ug/g)</u>									
4100			TITR	80HIT 02	22.1		OES	77FLA 01	
4200			OES	62JOE 01	22.9	0.06	ITNA	77FLA 01	
4300			CHEM	62JOE 01	30		OES	63CLA 01	
4300			CHEM	57SHI 01					
4600			COLOR	57SHI 01					
<u>Mn (ug/g)</u>									
39			OES	64FIL 01	1.04	0.08	FLUOR	74CRE 01	
39			CHEM	57SHI 01	1.2		UU	74WAH 01	
40			CHEM	62JOE 01	1.37		UU	65WEL 01	
96.5			OES	77FLA 01					
100	3	OES	63CLA 01		27.59		TITR	77OHL 01	
100	3	OES	63CLA 01		27.6		CHEM	62JOE 01	
27.6					27.6		OES	62JOE 01	
<u>Mo (ug/g)</u>									
<	1	L	OES	63CLA 01					
1			CHEM	57SHI 01					
<u>Nd (ug/g)</u>									
49	0.58		ITNA	77FLA 01	6.3		OES	77FLA 01	
10.3					10.3	0.42	ITNA	77FLA 01	
<u>Ni (ug/g)</u>									
39			OES	64FIL 01	6.47		OES	77FLA 01	
40			OES	63CLA 01					
52.8			OES	77FLA 01					

TABLE 98-2: INDIVIDUAL DATA FOR NBS SRM 98 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sr (ug/g)</u>										
205			RTNA	61TUR 01		106			OES	64FIL 01
230			OES	58GRA 01		120			OES	62JOE 01
300			OES	63CLA 01		140			CHEM	62JOE 01
326			OES	77FLA 01		140			CHEM	57SHI 01
390			OES	75THO 01		161			COLOR	57SHI 01
<u>Ta (ug/g)</u>										
2.22	0.03		ITNA	77FLA 01		200	3	OES	63CLA 01	
						300	3	OES	63CLA 01	
						310		OES	77FLA 01	
<u>Tb (ug/g)</u>										
1.35	0.02		ITNA	77FLA 01		28			OES	64FIL 01
						40			OES	63CLA 01
						46.7			OES	77FLA 01
<u>Th (ug/g)</u>										
19.5	0.21		ITNA	77FLA 01		4.9	0.1		ITNA	77FLA 01
<u>Ti (ug/g)</u>										
8400			CHEM	62JOE 01		6.8			OES	77FLA 01
8600			CHEM	57SHI 01		21.2			OES	77FLA 01
8690			OES	62JOE 01		<u>Zn (ug/g)</u>				
9000	3	OES	63CLA 01			125	2.1		ITNA	77FLA 01
9300			COLOR	57SHI 01		<u>Zr (ug/g)</u>				
10000	3	OES	63CLA 01			190			OES	64FIL 01
						270			OES	62JOE 01
						300			OES	63CLA 01
						300			CHEM	62JOE 01
						340	19.6		ITNA	77FLA 01
						377			OES	77FLA 01

TABLE 98A-1: COMPILED DATA FOR NBS SRM 98A PLASTIC CLAY (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		RANGE	NAA	OES	OTHER METHODS
		Mean	Mean $\pm$ SD	(n)		Mean (n)	Mean (n)	Mean (n) Method
Al	%	17.56	17.42	(1)	---	17.42 (1)	---	---
As	ug/g	---	11.4	(1)	---	---	---	11.4 (1) AA
B	ug/g	---	120	(1)	---	---	120 (1)	---
Ba	ug/g	270	320	(2)	168 - 480	480 (1)	168 (1)	---
Be	ug/g	---	5.4	(2)	4.8 - 5.93	---	5.93 (1)	4.8 (1) AA
Bi	ng/g	---	790	(1)	---	---	---	790 (1) AA
C	ug/g	---	8100	(1)	---	---	---	8100 (1) CB
Ca	ug/g	2200	---		---	---	---	---
Cd	ng/g	---	47	(1)	---	---	---	47 (1) AA
Ce	ug/g	---	200	(2)	180 - 219	219 (1)	180 (1)	---
Co	ug/g	---	13	(2)	11.5 - 14.4	11.5 (1)	14.4 (1)	---
Cr	ug/g	200	223	(2)	212 - 234	212 (1)	234 (1)	---
Cs	ug/g	---	6.2	(1)	---	6.2 (1)	---	---
Cu	ug/g	---	121	(1)	---	---	121 (1)	---
Dy	ug/g	---	17.5	(1)	---	---	17.5 (1)	---
Eu	ug/g	---	3.35	(2)	3.18 - 3.52	3.18 (1)	3.52 (1)	---
Fe	ug/g	9370	8800	(1)	---	8800 (1)	---	---
Ga	ug/g	---	23.3	(1)	---	---	23.3 (1)	---
Hf	ug/g	---	7.3	(1)	---	7.3 (1)	---	---
Hg	ng/g	---	39.3	(1)	---	---	---	39.3 (1) AA
K	ug/g	8630	---		---	---	---	---
LOI	%	12.44	---		---	---	---	---
La	ug/g	---	130	(2)	91.7 - 162	162 (1)	91.7 (1)	---
Li	ug/g	325	291	(1)	---	---	291 (1)	---
Lu	ug/g	---	1.15	(1)	---	1.15 (1)	---	---
Mg	ug/g	2500	---		---	---	---	---
Mn	ug/g	---	41.4	(1)	---	---	41.4 (1)	---
Na	ug/g	610	---		---	---	---	---
Nb	ug/g	---	39.9	(1)	---	---	39.9 (1)	---
Nd	ug/g	---	98	(1)	---	98 (1)	---	---
Ni	ug/g	---	162	(1)	---	---	162 (1)	---
P	ug/g	480	---		---	---	---	---
Pb	ug/g	---	68	(2)	66.8 - 69.2	---	69.2 (1)	66.8 (1) AA
Rb	ug/g	---	35	(1)	---	35 (1)	---	---
S	ug/g	---	1300	(1)	---	---	---	1300 (1) CB
Sb	ug/g	---	2.4	(2)	2.3 - 2.57	2.3 (1)	---	2.57 (1) AA
Sc	ug/g	---	32	(2)	28.8 - 34.8	34.8 (1)	28.8 (1)	---
Si	%	22.85	22.2	(1)	---	22.2 (1)	---	---
Sm	ug/g	---	12	(2)	9.18 - 15	15 (1)	9.18 (1)	---
Sn	ug/g	---	5.3 $\pm$ 0.4	(3)	4.88 - 5.76	---	4.88 (1)	5.50 (2) AA
Sr	ug/g	330	438	(1)	---	---	438 (1)	---
Ta	ug/g	---	2.46	(1)	---	2.46 (1)	---	---
Tb	ug/g	---	2.92	(1)	---	2.92 (1)	---	---
Th	ug/g	---	23.9	(1)	---	23.9 (1)	---	---
Ti	%	0.964	---		---	---	---	---
Tl	ng/g	---	351	(1)	---	---	---	351 (1) ASV
V	ug/g	---	554	(1)	---	---	554 (1)	---
Y	ug/g	---	176	(1)	---	---	176 (1)	---
Yb	ug/g	---	9.8	(2)	9.3 - 10.3	9.3 (1)	10.3 (1)	---
Zn	ug/g	---	< 23		---	< 23	---	---
Zr	ug/g	---	740	(1)	---	740 (1)	---	---

TABLE 98A-2: INDIVIDUAL DATA FOR NBS SRM 98A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
17.42	2.5		ITNA	84CEL 01	6.2	0.06		ITNA	77FLA 01
<u>As (ug/g)</u>									
11.4		HAA		84TER 04	121		OES		77FLA 01
<u>B (ug/g)</u>									
120		OES		77FLA 01	17.5		OES		77FLA 01
<u>Ba (ug/g)</u>									
168		OES		77FLA 01	3.18	0.02	ITNA		77FLA 01
480	20	ITNA		77FLA 01	3.52		OES		77FLA 01
<u>Be (ug/g)</u>									
4.8	D	AA		83TER 01	8800	30	ITNA		77FLA 01
4.8		AA		82TER 02					
5.93		OES		77FLA 01					
<u>Bi (ng/g)</u>									
790	D	FAA		84TER 03	23.3		OES		77FLA 01
790		HAA		84TER 02					
<u>C (ug/g)</u>									
8100		CB		78TER 01					
<u>Cd (ng/g)</u>									
47		AA		84TER 01					
<u>Ce (ug/g)</u>									
180		OES		77FLA 01					
219	0.29	ITNA		77FLA 01					
<u>Co (ug/g)</u>									
11.5	0.06	ITNA		77FLA 01					
14.4		OES		77FLA 01					
<u>Cr (ug/g)</u>									
212	4.8	ITNA		77FLA 01			OES		77FLA 01
234		OES		77FLA 01	41.4				
<u>Cs (ug/g)</u>									
<u>Cu (ug/g)</u>									
<u>Dy (ug/g)</u>									
<u>Eu (ug/g)</u>									
<u>Fe (ug/g)</u>									
<u>Ga (ug/g)</u>									
<u>Hf (ug/g)</u>									
<u>Hg (ng/g)</u>									
<u>La (ug/g)</u>									
<u>Li (ug/g)</u>									
<u>Lu (ug/g)</u>									
<u>Mn (ug/g)</u>									

TABLE 98A-2: INDIVIDUAL DATA FOR NBS SRM 98A

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u><u>Nb (ug/g)</u></u>										
39.9			OES	77FLA 01		438			OES	77FLA 01
<u><u>Nd (ug/g)</u></u>										
98	2.6		ITNA	77FLA 01		2.46	0.03		ITNA	77FLA 01
<u><u>Ni (ug/g)</u></u>										
162			OES	77FLA 01		2.92	0.06		ITNA	77FLA 01
<u><u>Pb (ug/g)</u></u>										
66.8			AA	84TER 01		23.9	0.11		ITNA	77FLA 01
69.2			OES	77FLA 01						
<u><u>Rb (ug/g)</u></u>										
35	2.3		ITNA	77FLA 01		351	40	7	ASV	82CAL 01
<u><u>S (ug/g)</u></u>										
1300			CB	78TER 01		554			OES	77FLA 01
<u><u>Sb (ug/g)</u></u>										
2.3	0.1		ITNA	77FLA 01		176			OES	77FLA 01
2.57			HAA	84TER 04						
<u><u>Sc (ug/g)</u></u>										
28.8			OES	77FLA 01		9.3	0.29		ITNA	77FLA 01
34.8	0.21		ITNA	77FLA 01		10.3			OES	77FLA 01
<u><u>Si (%)</u></u>										
22.2	1.2		IENA	84CEL 01		<	23	L	ITNA	77FLA 01
<u><u>Sm (ug/g)</u></u>										
9.18			OES	77FLA 01		740	32		ITNA	77FLA 01
15	2.4		ITNA	77FLA 01						
<u><u>Sn (ug/g)</u></u>										
4.88			OES	77FLA 01						
5.25			AA	82TER 01						
5.76	0.3		FAA	85TER 01						

TABLE 99-1: COMPILED DATA FOR NBS SRM 99 SODA FELDSPAR (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	NAA	OES	OTHER METHODS	
		Mean	Mean ± SD	(n)			Mean (n)	Mean ± SD (n)	Mean (n) Method	
Al	%	10.08	10.07	(1)	---	---	---	---	10.07 (1)	TITR
B	ug/g	---	10	(1)	---	---	---	10 (1)	---	
Ba	ug/g	90	< 130		---	---	< 130	< 800		
Ca	ug/g	2570	---		---	---	---	---		
Ce	ug/g	---	8	(1)	---	---	8 (1)	---		
Co	ng/g	---	740	(2)	---	700 - 780	740 (2)	---		
Cr	ug/g	---	7.2 ± 5.1	(3)	8.51	3.3 - 13	4.3 (2)	13 (1)		
Cs	ng/g	---	700	(1)	---	---	700 (1)	---		
Cu	ug/g	---	21	(2)	---	20 - 22	---	21 (2)		
Eu	ng/g	---	350	(1)	---	---	350 (1)	---		
Fe	ug/g	470	500	(1)	---	---	500 (1)	---		
Ga	ug/g	---	30	(1)	---	---	---	30 (1)		
Hf	ng/g	---	900	(1)	---	---	900 (1)	---		
K	ug/g	3400	---		---	---	---	---		
LOI	%	0.52	---		---	---	---	---		
La	ug/g	---	< 8		---	---	< 8	< 100		
Lu	ng/g	---	< 200		---	---	< 200	---		
Mg	ug/g	320	---		---	---	---	---		
Mn	ug/g	< 70	31	(2)	---	12 - 50	---	31 (2)		
Na	%	7.96	7.94	(1)	---	---	---	---	7.94 (1)	XRF
Nd	ug/g	---	< 4		---	---	< 4	---		
Ni	ug/g	---	15	(1)	---	---	---	15 (1)		
P	ug/g	620	567	(1)	---	---	---	567 (1)		
Pb	ug/g	---	106	(2)	---	62 - 150	---	106 (2)		
Rb	ug/g	---	23	(1)	---	---	23 (1)	---		
Sb	ng/g	---	500	(1)	---	---	500 (1)	---		
Sc	ng/g	---	830	(1)	---	---	830 (1)	---		
Si	%	32.06	32.05	(2)	---	32.05 - 32.05	---	---	32.05 (1)	TITR
Si	%	---	---		---	---	---	---	32.05 (1)	COLOR
Sm	ug/g	---	< 2		---	---	< 2	---		
Sr	ug/g	---	220 ± 160	(3)	130	120 - 400	120 (1)	265 (2)		
Ta	ug/g	---	1.9	(1)	---	---	1.9 (1)	---		
Tb	ng/g	---	280	(1)	---	---	280 (1)	---		
Th	ug/g	---	1.6	(1)	---	---	1.6 (1)	---		
Ti	ug/g	100	240 ± 220	(4)	68	61 - 560	---	140 ± 70 (3)	560 (1)	COLOR
U	ug/g	---	1.09	(1)	---	---	1.09 (1)	---		
V	ug/g	---	< 10		---	---	---	< 10		
Y	ug/g	---	10	(1)	---	---	---	10 (1)		
Yb	ug/g	---	1	(1)	---	---	1 (1)	---		
Zn	ug/g	---	15.9 ± 1.8	(3)	15	14.6 - 18	16.3 (2)	---		
Zr	ug/g	---	26	(2)	---	11 - 40	---	---		

TABLE 99-2: INDIVIDUAL DATA FOR NBS SRM 99 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>										
10.07			TITR	58WAT 01		900	60		ITNA	77FLA 01
<u>B (ug/g)</u>										
10			OES	63CLA 01		< 8	L	ITNA	77FLA 01	
<u>Ba (ug/g)</u>										
< 130	L	ITNA	77FLA 01			< 100	L	OES	63CLA 01	
< 800	L	OES	63CLA 01			< 200	L	ITNA	77FLA 01	
<u>Ce (ug/g)</u>										
8	0.6		ITNA	77FLA 01		12		OES	64FIL 01	
<u>Co (ng/g)</u>										
< 10000	L	OES	63CLA 01			50		OES	63CLA 01	
700	30	ITNA	77FLA 01			7.94		WXRF	83BAL 01	
780	120	RTNA	61TUR 01							
<u>Cr (ug/g)</u>										
< 20	L	OES	63CLA 01			< 4	L	ITNA	77FLA 01	
3.3	0.16	ITNA	77FLA 01							
5.3		RTNA	61TUR 01							
13		OES	64FIL 01			15		OES	63CLA 01	
<u>Cs (ng/g)</u>										
700	100		ITNA	77FLA 01		567		OES	64FIL 01	
<u>Cu (ug/g)</u>										
20		OES	63CLA 01			62		OES	64FIL 01	
22		OES	64FIL 01			150		OES	63CLA 01	
<u>Eu (ng/g)</u>										
350		ITNA	77FLA 01			23	1.6		ITNA	77FLA 01
<u>Fe (ug/g)</u>										
500		ITNA	77FLA 01			500	60		ITNA	77FLA 01
<u>Ga (ug/g)</u>										
30		OES	63CLA 01			< 10000	L	OES	63CLA 01	
						830	10	ITNA	77FLA 01	

TABLE 99-2: INDIVIDUAL DATA FOR NBS SRM 99 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Si (%)</u>									
32.05			COLOR	82SAR 01	1.09			DNA	66HAM 01
32.05	0.01		TITR	77OHL 01					
<u>Sm (ug/g)</u>									
<	2	L	ITNA	77FLA 01	<	10	L	OES	63CLA 01
<u>Sr (ug/g)</u>									
120			RTNA	61TUR 01	10			OES	63CLA 01
130			OES	75THO 01					
400			OES	63CLA 01					
<u>Ta (ug/g)</u>									
1.9	0.02		ITNA	77FLA 01					
<u>Tb (ng/g)</u>									
280	6		ITNA	77FLA 01	14.6			RTNA	65BAL 01
					15			XRF	65BAL 01
					18	0.82		ITNA	77FLA 01
<u>Th (ug/g)</u>									
1.6	0.03		ITNA	77FLA 01	<	100	L	ITNA	77FLA 01
					11			OES	64FIL 01
					40			OES	63CLA 01
<u>Ti (ug/g)</u>									
61			OES	64FIL 01					
150	3		OES	63CLA 01					
200	3		OES	63CLA 01					
560			COLOR	63KOR 01					

TABLE 99A-1: COMPILED DATA FOR NBS SRM 99A SODA FELDSPAR (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA	NAA	OTHER METHODS
		Mean	Mean ± SD	(n)			Mean (n)	Mean (n)	Mean (n) Method
Al	%	10.8	---		---	---	---	---	---
Ba	ug/g	2330	2570	(1)	---	---	---	2570 (1)	---
Be	ug/g	---	2.02	(1)	---	---	2.02 (1)	---	---
Bi	ng/g	---	3	(1)	---	---	3 (1)	---	---
C	ug/g	---	300	(1)	---	---	---	---	300 (1) CB
Ca	%	1.53	1.51	(1)	---	---	1.51 (1)	---	---
Cd	ng/g	---	< 200		---	---	---	---	---
Ce	ug/g	---	5	(1)	---	---	---	5 (1)	---
Co	ng/g	---	100	(1)	---	---	---	100 (1)	---
Cr	ug/g	---	< 3		---	---	---	< 3	---
Cs	ug/g	---	5 ?	(2)	---	0.5 - 9	9 (1)	0.5 (1)	---
Eu	ng/g	---	820	(1)	---	---	---	820 (1)	---
Fe	ug/g	450	475	(2)	---	450 - 500	450 (1)	500 (1)	---
Hf	ng/g	---	300	(1)	---	---	---	300 (1)	---
Hg	ng/g	---	165	(1)	---	---	165 (1)	---	---
K	%	4.3	4.27 ± 0.12	(3)	4.2	4.2 - 4.4	4.4 (1)	---	4.2 (1) FE
K	%	---	---		---	---	---	---	4.2 (1) ISE
LOI	%	0.26	---		---	---	---	---	---
La	ug/g	---	22	(1)	---	---	---	22 (1)	---
Lu	ng/g	---	< 100		---	---	---	< 100	---
Mg	ug/g	120	130	(1)	---	---	130 (1)	---	---
Na	%	4.6	4.55 ± 0.09	(3)	4.6	4.45 - 4.6	4.45 (1)	---	4.6 (1) ISE
Na	%	---	---		---	---	---	---	4.6 (1) FE
Nd	ug/g	---	< 4		---	---	---	< 4	---
P	ug/g	87	55	(2)	---	50 - 60	---	---	60 (1) COLOR
Rb	ug/g	---	104	(2)	---	100 - 109	100 (1)	109 (1)	---
S	ug/g	---	19	(1)	---	---	---	---	---
Sb	ng/g	---	< 300		---	---	---	< 300	---
Sc	ng/g	---	230	(1)	---	---	---	230 (1)	---
Si	%	30.4	30.42	(1)	---	---	30.42 (1)	---	---
Sm	ng/g	---	500	(1)	---	---	---	500 (1)	---
Sn	ug/g	---	0.45	(1)	---	---	---	---	---
Ta	ng/g	---	< 200		---	---	---	< 200	---
Tb	ng/g	---	< 200		---	---	---	< 200	---
Th	ng/g	---	500	(1)	---	---	---	500 (1)	---
Ti	ug/g	42	---		---	---	---	---	---
Yb	ng/g	---	< 300		---	---	---	< 300	---
Zn	ug/g	---	< 7		---	---	---	< 7	---
Zr	ug/g	---	70	(1)	---	---	---	70 (1)	---

TABLE 99A-2: INDIVIDUAL DATA FOR NBS SRM 99A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u><u>Ba (ug/g)</u></u>									
2570	38.6		ITNA	77FLA 01	300	30		ITNA	77FLA 01
<u><u>Be (ng/g)</u></u>									
2020		AA		83TER 01	164.6	7.35	FAA		82FLA 01
<u><u>Bi (ng/g)</u></u>									
3		FAA		84TER 03	4.2		FE		75PUF 01
<u><u>C (ug/g)</u></u>									
300		CB		78TER 01	4.2	0.13	ISE		75PUF 01
<u><u>Ca (%)</u></u>									
1.51		AA		73RAM 01	4.4		AA		73RAM 01
<u><u>Cd (ng/g)</u></u>									
< 200		ICPES		83UCH 02	<u><u>La (ug/g)</u></u>		22	1.9	ITNA
<u><u>Ce (ug/g)</u></u>									
5	0.29		ITNA	77FLA 01	<u><u>Lu (ng/g)</u></u>		1.9		77FLA 01
<u><u>Co (ng/g)</u></u>									
100		ITNA		77FLA 01	<u><u>Mg (ug/g)</u></u>		< 100	L	ITNA
<u><u>Cr (ug/g)</u></u>									
< 3	L	ITNA		77FLA 01	<u><u>Na (%)</u></u>		130		AA
<u><u>Cs (ug/g)</u></u>									
0.5	0.03		ITNA	77FLA 01	<u><u>Nd (ug/g)</u></u>		4.45		73RAM 01
9		AA		72ALL 01	<u><u>P (%)</u></u>		4.6		75PUF 01
<u><u>Eu (ng/g)</u></u>									
820	4		ITNA	77FLA 01	<u><u>Rb (ug/g)</u></u>		4.6	0.1	ISE
<u><u>Fe (ug/g)</u></u>									
450		AA		73RAM 01	<u><u>S (ug/g)</u></u>		100		75PUF 01
500		ITNA		77FLA 01	<u><u>CB</u></u>		109	1.2	ITNA
					<u><u>78TER 01</u></u>		19		

TABLE 99A-2: INDIVIDUAL DATA FOR NBS SRM 99A

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u><b>Sb (ng/g)</b></u>									
< 300	L	ITNA	77FLA	01	< 200	L	ITNA	77FLA	01
<u><b>Sc (ng/g)</b></u>									
230		ITNA	77FLA	01	< 200	L	ITNA	77FLA	01
<u><b>Si (%)</b></u>									
30.42	0.4	AA	82KIS	01	500		ITNA	77FLA	01
<u><b>Sm (ng/g)</b></u>									
500	70	ITNA	77FLA	01	< 300	L	ITNA	77FLA	01
<u><b>Sn (ug/g)</b></u>									
0.45		AA	82TER	01	< 7	L	ITNA	77FLA	01
<u><b>Yb (ng/g)</b></u>									
					70		ITNA	77FLA	01
<u><b>Zn (ug/g)</b></u>									
<u><b>Zr (ug/g)</b></u>									

TABLE 120A-1: COMPILED DATA ON NBS SRM 120A PHOSPHATE ROCK (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		MEDIAN	RANGE	ICPES		OTHER METHODS	
			Mean ± SD	(n)			Mean (n)	± SD (n)	Method	
Al	ug/g	5000	4500	(1)	---	---	4500	(1)	---	
Be	ug/g	---	1.88	(1)	---	---	---	1.88	(1)	AA
C	%	---	1.04	(1)	---	---	---	1.04	(1)	CB
C-inorg	ug/g	8700	---		---	---	---	---		
Ca	%	36	36.06	(2)	---	36.02 - 36.1	36.1	(1)	36.02	(1) TITR
Cd	ug/g	---	11.8	(1)	---	---	---	11.8	(1)	AA
F	%	3.92	3.90 ± 0.10	(7)	3.88	3.8 - 4.04	---	3.88 ± 0.09	(5)	ISE
F	%	---	---		---	---	---	4.04	(1)	CPAA
F	%	---	---		---	---	---	3.82	(1)	COLOR
Fe	ug/g	6990	7340	(1)	---	---	7340	(1)	---	
Hg	ng/g	---	57.5	(1)	---	---	---	57.5	(1)	AA
K	ug/g	830	---		---	---	---	---		
Mg	ug/g	1600	1400	(1)	---	---	1400	(1)	---	
Mn	ug/g	150	160	(1)	---	---	160	(1)	---	
Na	ug/g	3000	---		---	---	---	---		
P	%	15	---		---	---	---	---		
Pb	ug/g	---	9.3	(1)	---	---	---	9.3	(1)	AA
S	ug/g	---	2900	(1)	---	---	---	2900	(1)	CB
Ti	ug/g	720	720	(1)	---	---	720	(1)	---	
U	ug/g	---	110	(1)	---	---	---	110	(1)	COLOR

TABLE 120A-2: INDIVIDUAL DATA FOR NBS SRM 120A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (ug/g)</u>									
4500			ICPES	80BRE 01	7340			ICPES	80BRE 01
<u>Be (ug/g)</u>			AA	83TER 01	<u>Hg (ng/g)</u>			FAA	82FLA 01
1.88					57.5	3.6			
<u>C (%)</u>			CB	78TER 01	<u>Mg (ug/g)</u>			ICPES	80BRE 01
1.04					1400				
<u>Ca (%)</u>			TITR	80HIT 02	<u>Mn (ug/g)</u>			ICPES	80BRE 01
36.02					160				
36.1			ICPES	80BRE 01	<u>Pb (ug/g)</u>				
<u>Cd (ug/g)</u>									
11.8			AA	84TER 01	9.3			AA	84TER 01
<u>F (%)</u>					<u>S (ug/g)</u>			CB	78TER 01
3.8					2900				
3.8	0.1		ISE	69EDM 01	<u>Ti (ug/g)</u>				
3.82	0.05		ISE	77HOP 01	720			ICPES	80BRE 01
3.82	0.05		COLOR	83CHA 02					
3.88			ISE	69EDM 01					
3.93			ISE	71PET 01	<u>U (ug/g)</u>				
4.01			ISE	71PET 01	110	10		COLOR	810GU 01
4.04			CPAA	85ROE 01					

TABLE 120B-1: COMPILED DATA FOR NBS SRM 120B PHOSPHATE ROCK (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	AA Mean (n)	NAA Mean (n)	ICPES Mean ± SD (n)	OTHER METHODS	
			Mean ± SD (n)	Median					Mean (n)	Method
Ag	ug/g	---	5	(1)	---	---	---	5	(1)	---
Al	ug/g	5600	5790 ± 350	(8)	5980	5100 - 6000	5100 (1)	5880 ± 240 (6)	6000 (1)	TGGS
As	ug/g	---	5.52	(1)	---	---	5.52 (1)	---	---	---
Au	ug/g	---	< 3	---	---	---	---	< 3	---	---
Ba	ug/g	---	61	(1)	---	---	---	61 (1)	---	---
Be	ug/g	---	2.86	(2)	---	2.82 - 2.9	2.82 (1)	2.9 (1)	---	---
Bi	ng/g	---	197	(1)	---	---	197 (1)	---	---	---
C	%	---	1.39	(2)	---	0.983 - 1.8	---	---	1.8 (1)	SIMS
C	%	---	---	---	---	---	---	---	0.983 (1)	CB
C-inorg	ug/g	7600	---	---	---	---	---	---	---	---
Ca	%	35.32	34.4 ± 1.1	(9)	35.06	32.7 - 35.41	33.98 (1)	35.0 ± 0.6 (6)	32.7 (1)	TGGS
Cd	ug/g	18	22 ± 3	(3)	22	20.1 - 25.3	22.7 (2)	---	22 (1)	---
Ce	ug/g	---	115 ± 14	(3)	118	100 - 128	---	100 (1)	123 (2)	---
Co	ug/g	---	2.85	(2)	---	2.7 - 3	---	2.7 (1)	.3 (1)	---
Cr	ug/g	---	59.6	(2)	---	56 - 63.1	---	56 (1)	63.1 (1)	---
Cu	ug/g	---	9.95	(2)	---	8.6 - 11.3	11.3 (1)	---	8.6 (1)	---
Dy	ug/g	---	17.2	(2)	---	17 - 17.3	---	---	17.15 (2)	---
Er	ug/g	---	11.7	(2)	---	11.4 - 12	---	---	11.7 (2)	---
Eu	ug/g	---	3.6 ± 0.2	(3)	3.5	3.5 - 3.89	---	3.5 (1)	3.7 (2)	---
F	%	3.84	3.89 ± 0.10	(5)	3.89	3.78 - 4.04	---	3.8 (2)	---	CPAA
F	%	---	---	---	---	---	---	---	3.93 (1)	---
F	%	---	---	---	---	---	---	---	4.04 (1)	ISE
Fe	ug/g	7700	7350 ± 480	(12)	7400	6570 - 7970	7214 (2)	7135 (22)	7350 ± 350 (6)	7400 (1)
Gd	ug/g	---	18.9 ± 1.8	(3)	18	17.8 - 21	---	18.9 ± 1.8 (3)	---	---
Hf	ug/g	---	2	(1)	---	---	2 (1)	---	---	---
Ho	ug/g	---	3.92	(2)	---	3.8 - 4.03	---	3.92 (2)	---	---
K	ug/g	1000	705 ± 91	(4)	660	600 - 800	800 (1)	600 (1)	760 (1)	SIMS
La	ug/g	---	88 ± 6	(4)	89	79 - 92.8	---	79 (1)	91 ± 2 (3)	---
Li	ug/g	---	< 2	---	---	---	---	< 2	---	---
Lu	ug/g	---	1.70 ± 0.10	(3)	1.71	1.6 - 1.8	---	1.8 (1)	1.66 (2)	---

TABLE 120B-1: COMPILED DATA FOR NBS SRM 120B PHOSPHATE ROCK (cont.)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	AA Mean (n)	NAA Mean (n)	ICPES Mean ± SD (n)	OTHER METHODS	
			Mean ± SD (n)	Median					Mean (n)	Mean (n) Method
Mg	ug/g	1700	1695 ± 90	(7)	1700 - 1870	1600 (1)	---	1710 ± 90 (6)	---	---
Mn	ug/g	250	244 ± 12	(4)	240 - 260	243 (2)	---	245 (2)	---	---
Mo	ug/g	---	< 5	---	---	---	---	< 5	---	---
Na	ug/g	2600	2660 ± 260	(4)	2630 - 2900	2300 (1)	---	2630 (1)	2800 (1) TCGS	---
Na	ug/g	---	---	---	---	---	---	---	2900 (1) SIMS	---
Nd	ug/g	---	75 ± 6	(3)	77	68 - 79.5	---	68 (1)	78.25 (2)	---
Ni	ug/g	---	17 ± 6	(3)	15.4	12 - 22.9	22.9 (1)	12 (1)	15.4 (1)	---
O	%	15.07	15.06 ± 0.18	(7)	15.12	14.7 - 15.21	---	---	15.12 ± 0.10 (6)	14.7 (1) TCGS
Pb	ug/g	---	24 ± 10	(3)	25	13.1 - 32.7	22.9 (2)	---	25 (1)	---
Pr	ug/g	---	17.4	(2)	---	17 - 17.9	---	---	17.45 (2)	---
Ra-226	pCi/g	---	43.3	(1)	---	---	---	---	43.3 (1) GAMMA	---
S	ug/g	---	2200	(1)	---	---	---	---	---	---
Sb	ug/g	---	5.81	(2)	---	1.62 - 10	1.62 (1)	---	10 (1)	---
Sc	ug/g	---	6.4	(1)	---	---	6.4 (1)	---	---	---
Se	ug/g	---	< 30	---	---	---	---	< 30	---	---
Si	%	2.18	2.22 ± 0.12	(10)	2.21	2.01 - 2.41	2.31 (2)	2.12 (1)	2.24 ± 0.08 (5)	2.19 (1) TCSS
Sm	ug/g	---	23 ± 13	(3)	16	15.8 - 38	---	---	23 ± 13 (3)	---
Sn	ug/g	---	0.41	(1)	---	---	0.41 (1)	---	---	---
Sr	ug/g	---	705	(1)	---	---	---	---	705 (1)	---
Ta	ng/g	---	200	(1)	---	---	200 (1)	---	---	---
Tb	ug/g	---	2	(1)	---	---	2 (1)	---	---	---
Th	ug/g	---	8.0 ± 0.9	(3)	7.9	7.2 - 9.05	---	7.2 (1)	---	8.475 (2) AS
Ti	ug/g	900	870 ± 100	(5)	950	740 - 950	---	780 (1)	880 ± 120 (3)	950 (1) TCSS
Tm	ug/g	---	1.1	(1)	---	---	---	1.1 (1)	---	---
U	ug/g	128.4 ± 0.5	132 ± 5	(5)	130.25	125.7 - 140	---	132.85 (2)	130.25 (1)	131 (2) AS
U-238	pCi/g	---	42.8	(1)	---	---	---	---	42.8 (1) GAMMA	---
V	ug/g	---	170 ± 100	(3)	120	103 - 280	280 (1)	---	111.5 (2)	---
Y	ug/g	---	172	(1)	---	---	---	---	172 (1)	---
Yb	ug/g	---	10.9 ± 1.2	(4)	10.2	10 - 12.7	---	10.2 (1)	11.2 ± 1.4 (3)	---
Zn	ug/g	---	117	(2)	---	107 - 127	107 (1)	---	127 (1)	---
Zr	ug/g	---	12	(1)	---	---	---	12 (1)	---	---

TABLE 120B-2: INDIVIDUAL DATA FOR NBS SRM 120B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference					
<u>Ca (%)</u>														
<u>Ag (ug/g)</u>					17.8			SIMS	78MOR 01					
5			ICPES	81CHU 01	32.7		35	TCGS	78GLA 04					
					33			EXRF	80DAL 01					
<u>Al (ug/g)</u>					33.78	2.07		ICPES	82JEN 01					
5100	100		AA	82JEN 01	33.98	0.72		AA	82JEN 01					
5400	500		ICPES	82JEN 01	35.06	1.16		ICPES	81CHU 01					
5870	20		ICPES	81CHU 01	35.24		11	ICPES	83HOF 01					
5980		11	ICPES	83HOF 01	35.24		11	ICPES	84HOF 01					
6000		35	TCGS	78GLA 04	35.41	0.06	11	ICPES	84HOF 01					
6000		11	ICPES	84HOF 01	35.41	0.06	11	ICPES	83HOF 01					
6000	480	11	ICPES	84HOF 01	<u>Cd (ug/g)</u>									
6000	500	11	ICPES	83HOF 01	20.1			AA	84TER 01					
7780			EXRF	80DAL 01	22		10	ICPES	81CHU 01					
8500			SIMS	78MOR 01	25.3			AA	76KRI 03					
<u>As (ug/g)</u>					<u>Ce (ug/g)</u>									
< 5.52	5	L	ICPES	81CHU 01	100			ITNA	85POT 02					
			HAA	84TER 04	118			ICPES	84MCA 01					
<u>Au (ug/g)</u>					128	3		ICPES	85JAR 02					
<	3	L	ICPES	81CHU 01	182	3.6		ICPES	81CHU 01					
<u>Ba (ug/g)</u>					<u>Co (ug/g)</u>									
61	1.2		ICPES	81CHU 01	2.7			ITNA	85POT 02					
					3	1		ICPES	81CHU 01					
<u>Be (ug/g)</u>					<u>Cr (ug/g)</u>									
2.82			AA	82TER 02	56			ITNA	85POT 02					
2.82	D		AA	83TER 01	63.1	1.9		ICPES	81CHU 01					
2.9	0.06		ICPES	81CHU 01	<u>Cu (ug/g)</u>									
<u>Bi (ng/g)</u>					8.6	1		ICPES	81CHU 01					
< 197	25000	L	ICPES	81CHU 01	11.3			AA	76KRI 03					
197			HAA	84TER 02	<u>Dy (ug/g)</u>									
197	D		FAA	84TER 03	<u>Er (ug/g)</u>									
<u>C (%)</u>					17			ICPES	84MCA 01					
0.983			CB	77TIL 01	17.3	0.2		ICPES	85JAR 02					
1.8			SIMS	78MOR 01	<u>Eu (ug/g)</u>									
					11.4	0.1		ICPES	85JAR 02					
					12			ICPES	84MCA 01					

TABLE 120B-2: INDIVIDUAL DATA FOR NBS SRM 120B (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Eu (ug/g)</u>						<u>K (ug/g)</u>				
3.5			ITNA	85POT 02		110		35	TCGS	78GLA 04
3.5			ICPES	84MCA 01		600	200		ICPES	82JEN 01
3.89	0.07		ICPES	85JAR 02		660			EXRF	80DAL 01
4.8	1		ICPES	81CHU 01		760			SIMS	78MOR 01
<u>F (%)</u>						800	100		AA	82JEN 01
						1170	25		ICPES	81CHU 01
3.78	0.07		NAA	80NOR 01		<u>La (ug/g)</u>				
3.82		35	IENA	79GLA 03		79			ITNA	85POT 02
3.89	0.21		IC	82JEN 01		89	4		ICPES	81CHU 01
3.93	0.09		CPAA	84HAN 01		90			ICPES	84MCA 01
4.04	0.47		ISE	82JEN 01		92.8	1.6		ICPES	85JAR 02
<u>Fe (ug/g)</u>						<u>Li (ug/g)</u>				
3200			SIMS	78MOR 01		<	2	L	ICPES	81CHU 01
6570			ITNA	85POT 02		<u>Lu (ug/g)</u>				
6600	200		AA	82JEN 01		1.6			ICPES	84MCA 01
6990		11	ICPES	83HOF 01		1.71	0.05		ICPES	85JAR 02
7000		11	ICPES	84HOF 01		1.8			ITNA	85POT 02
7200	800		ICPES	82JEN 01		<u>Mg (ug/g)</u>				
7400		35	TCGS	78GLA 04		51		35	TCGS	78GLA 04
7500	300	11	ICPES	83HOF 01		1600	100		ICPES	82JEN 01
7500	350	11	ICPES	84HOF 01		1600	100		AA	82JEN 01
7700		35	IENA	79GLA 03		1700		11	ICPES	84HOF 01
7827			AA	76KRI 03		1700		11	ICPES	83HOF 01
7900	200		ICPES	81CHU 01		1700	60	11	ICPES	84HOF 01
7970			EXRF	80DAL 01		1700	100	11	ICPES	83HOF 01
<u>Gd (ug/g)</u>						1870	60		ICPES	81CHU 01
17.8	0.3		ICPES	85JAR 02		2800			SIMS	78MOR 01
18			ICPES	84MCA 01		<u>Mn (ug/g)</u>				
21	0.6		ICPES	81CHU 01		130			SIMS	78MOR 01
<u>Hf (ug/g)</u>						150			EXRF	80DAL 01
2			ITNA	85POT 02		230	15		ICPES	82JEN 01
<u>Ho (ug/g)</u>						240	20		AA	82JEN 01
3.8			ICPES	84MCA 01		246			AA	76KRI 03
4.03	0.04		ICPES	85JAR 02		260	7.8		ICPES	81CHU 01
						<	5	L	ICPES	81CHU 01

TABLE 120B-2: INDIVIDUAL DATA FOR NBS SRM 120B (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Na (ug/g)</u>					<u>S (ug/g)</u>				
2300	100		AA	82JEN 01	2200			EXRF	80DAL 01
2630	70		ICPES	81CHU 01					
2800		35	TCGS	78GLA 04	<u>Sb (ug/g)</u>				
2900			SIMS	78MOR 01	1.62			HAA	84TER 04
<u>Nd (ug/g)</u>					10			ICPES	81CHU 01
68			ITNA	85POT 02	<u>Sc (ug/g)</u>				
77			ICPES	84MCA 01	6.4			ITNA	85POT 02
79.5	0.9		ICPES	85JAR 02					
127	25		ICPES	81CHU 01	<u>Se (ug/g)</u>				
<u>Ni (ug/g)</u>					<	30	L	ICPES	81CHU 01
12		35	IENA	79GLA 03	<u>Si (%)</u>				
15.4	1		ICPES	81CHU 01	2.01			EXRF	80DAL 01
22.9			AA	76KRI 03	2.12		35	IENA	79GLA 03
<u>O (%)</u>					2.12	0.19		ICPES	82JEN 01
36	0.5		14NAA	80NOR 01	2.19		35	TCGS	78GLA 04
<u>P (%)</u>					2.21	0.01		AA	82KIS 01
12.97	0.79		IC	82JEN 01	2.23	0.03	11	ICPES	84HOF 01
13.5			SIMS	78MOR 01	2.23	0.03	11	ICPES	83HOF 01
14.7		35	TCGS	78GLA 04					
14.96	0.14	11	ICPES	84HOF 01	2.41	0.24		AA	82JEN 01
15.04	0.14	11	ICPES	83HOF 01	<u>Sm (ug/g)</u>				
15.12		11	ICPES	84HOF 01	2.32			ICPES	84HOF 01
15.19	1.23		ICPES	82JEN 01	2.32		11	ICPES	83HOF 01
15.2		11	ICPES	83HOF 01	2.41	0.24		AA	82JEN 01
15.21	0.38		ICPES	81CHU 01					
15.9			EXRF	80DAL 01	15.8	0.2		ICPES	85JAR 02
<u>Pb (ug/g)</u>					16			ICPES	84MCA 01
13.1			AA	84TER 01	38	1.9		ICPES	81CHU 01
25	5		ICPES	81CHU 01	<u>Sn (ug/g)</u>				
32.7			AA	76KRI 03	<	3	L	ICPES	81CHU 01
<u>Pr (ug/g)</u>					0.41	0.05		FAA	85TER 01
17			ICPES	84MCA 01	<u>Sr (ug/g)</u>				
17.9	0.2		ICPES	85JAR 02	705	14		ICPES	81CHU 01
<u>Ra-226 (pCi/g)</u>					<u>Ta (ng/g)</u>				
43.3	0.6		GAMMA	83KIM 01	200			ITNA	85POT 02
					<u>Tb (ug/g)</u>				
					2			ITNA	85POT 02

TABLE 120B-2: INDIVIDUAL DATA FOR NBS SRM 120B (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Th (ug/g)</u>									
<	25	L	ICPES	81CHU 01	42.8	0.8	GAMMA	83KIM 01	
7.2			ITNA	85POT 02					
7.9	0.8		AS	82ROE 01					
9.05	0.4		AS	82THO 02					
<u>Ti (ug/g)</u>									
590			SIMS	78MOR 01					
740	20		ICPES	81CHU 01					
780		35	IENA	79GLA 03					
950		35	TCGS	78GLA 04					
950	10	11	ICPES	83HOF 01					
950	10		ICPES	84HOF 01					
1200			EXRF	80DAL 01					
<u>Tm (ug/g)</u>									
1.1			ITNA	85POT 02					
<u>U (ug/g)</u>									
125.7	0.6		DNA	86GAU 01	107		AA	76KRI 03	
130	5		AS	82ROE 01	127	3.9	ICPES	81CHU 01	
130.25	1.5		ICPES	83NOR 01					
132	2		AS	82THO 02					
140			ITNA	85POT 02					
<u>U-238 (pCi/g)</u>									
<u>V (ug/g)</u>									
103					103	3.1	ICPES	81CHU 01	
120					120	10	ICPES	82JEN 01	
280					280	40	AA	82JEN 01	
<u>Y (ug/g)</u>									
172					172	5	ICPES	85JAR 02	
<u>Yb (ug/g)</u>									
10					10		ICPES	84MCA 01	
10.2					10.2		ITNA	85POT 02	
10.8					10.8	0.2	ICPES	85JAR 02	
12.7					12.7	0.4	ICPES	81CHU 01	
<u>Zn (ug/g)</u>									
12					12	1.2	ICPES	81CHU 01	
<u>Zr (ug/g)</u>									

TABLE 181-1: COMPILED DATA FOR NBS SRM 181 LITHIUM ORE (SPODUMENE)  
(revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
Bi	ng/g	---	892 (1)	AA
K	ug/g	2500	---	---
Li	%	2.97 ± 0.02	---	---
Na	ug/g	5900	---	---

TABLE 182-1: COMPILED DATA FOR NBS SRM 182 LITHIUM ORE (PETALITE)  
(revised 3/1/86)

ELEMENT	UNITS	NBS
K	ug/g	830
Li	%	2.02 ± 0.02
Na	ug/g	3000
Rb	ug/g	275

TABLE 183-1: COMPILED DATA FOR NBS SRM 183 LITHIUM ORE (LEPIDOLITE)  
(revised 3/1/86)

ELEMENT	UNITS	NBS
Cs	ug/g	2800
K	%	6.6
Li	%	1.92 ± 0.02
Na	ug/g	1500
Rb	%	3.2

TABLE 181-2: INDIVIDUAL DATA FOR NBS SRM 181  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Bi (ng/g)</u>				
892			FAA	84TER 03

TABLE 278-1: COMPILED DATA FOR NBS SRM 278 OBSIDIAN ROCK (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	Mean ± SD (n)	NAA	Mean ± SD (n)	ICPES	XRF	Mean (n)	Mean ± SD (n)	OTHER METHODS	
			Mean ± SD	n										Method	Method
Al	%	7.49 ± 0.08	7.61 ± 0.13	(7)	7.56	7.43 - 7.8			7.52 (2)	7.78 (1)	7.56 (1)		7.63 ± 0.14 (3)	TCGS	---
As	ug/g	---	4.9 ± 0.2	(3)	5.06	4.68 - 5.1			4.9 ± 0.2 (3)	---	---		---	---	---
Au	ng/g	---	2.12	(2)	---	1.6 - 2.64			2.12 (2)	---	---		---	---	---
B	ug/g	25	25 ± 2	(6)	24.9	21 - 27.9			---	---	---		25.6 ± 1.4 (5)	TCGS	---
B	ug/g	---	---	---	---	---			---	---	---		21 (1)	OES	---
Ba	ug/g	1140	1000 ± 90	(5)	1050	885 - 1080			1019 ± 90 (4)	928 (1)	---		---	---	---
Be	ug/g	---	1.9	(2)	---	1.4 - 2.4			---	2.4 (1)	---		1.4 (1)	OES	---
Br	ug/g	---	2.8 ± 0.2	(3)	2.65	2.61 - 2.99			2.75 ± 0.21 (3)	---	---		---	---	---
C-1	ug/g	27	---	---	---	---			---	---	---		---	---	---
C-T	ug/g	500	---	---	---	---			---	---	---		---	---	---
Ca	ug/g	7030 ± 20	7180 ± 170	(7)	7100	7000 - 7500			7250 (2)	7200 (1)	7080 (1)		7170 ± 110 (3)	TCGS	---
Cd	ng/g	---	180	(2)	---	180 - 180			---	---	---		180 (2)	TCGS	---
Ce	ug/g	62.2	60 ± 5	(8)	56.5	54.4 - 68			60 ± 5 (7)	61 (1)	---		620 ± 17 (3)	TCGS	---
Cl	ug/g	---	622 ± 14	(4)	610	610 - 640			---	---	---		627 (1)	ISE	---
Cl	ug/g	---	---	---	---	---			---	---	---		---	---	---
Co	ug/g	1.5	2.1 ± 0.3	(6)	2	1.85 - 2.7			2.1 ± 0.3 (5)	2 (1)	---		---	---	---
Cr	ug/g	6.1	6.4 ± 0.9	(5)	6.42	5 - 7.5			6.8 ± 0.5 (4)	5 (1)	---		---	---	---
Cs	ug/g	5.5	5.1 ± 0.2	(7)	5.12	4.9 - 5.46			5.1 ± 0.2 (7)	---	---		---	---	---
Cu	ug/g	5.9 ± 0.2	< 5	---	---	---			---	---	---		< 5	---	---
Dy	ug/g	---	6.5 ± 0.3	(3)	6.51	6.2 - 6.8			6.36 (2)	6.8 (1)	---		---	---	---
Er	ug/g	---	3.9	(2)	---	3.66 - 4.1			3.66 (1)	4.1 (1)	---		---	---	---
Eu	ng/g	840	800 ± 25	(8)	790	764 - 830			800 ± 24 (7)	770 (1)	---		---	---	---
F	ug/g	500	---	---	---	---			---	---	---		---	---	---
Fe	%	1.43 ± 0.02	1.46 ± 0.08	(9)	1.47	1.32 - 1.55			1.54 ± 0.02 (3)	1.47 (1)	1.45 (1)		1.41 ± 0.10 (4)	TCGS	---
Fe2O3	%	---	0.49	(1)	---	---			---	---	---		0.49 (1)	CALC	---
FeO	%	1.36 ± 0.02	1.38	(2)	---	1.35 - 1.42			---	---	---		1.42 (1)	COLOR	---
FeO	%	---	---	---	---	---			---	---	---		1.35 (1)	TITR	---
Ga	ug/g	---	11	(2)	---	10 - 12.47			11 (2)	22 (1)	---		5.49 ± 0.38 (6)	TCGS	---
Gd	ug/g	5.3	5.6 ± 0.4	(9)	5.5	4.96 - 6.1			5.3 ± 0.7 (3)	6.1 (1)	---		660 ± 200 (3)	TCGS	---
H	ug/g	---	660 ± 200	(3)	550	530 - 890			---	---	---		0.3 (1)	COUL	---
H2O+	%	---	0.30	(1)	---	---			---	---	---		0.05 (1)	COUL	---
H2O-	%	---	0.05	(1)	---	---			---	---	---		---	---	---
Hf	ug/g	8.4	8.76 ± 0.14	(3)	8.82	8.6 - 8.86			8.76 ± 0.14 (3)	---	---		---	---	---
Ho	ug/g	---	1.31 ± 0.16	(3)	1.23	1.2 - 1.5			1.22 (2)	1.5 (1)	---		---	---	---

TABLE 278-1 COMPILED DATA FOR NBS SRM 278 OBSIDIAN ROCK (cont.)

ELE	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		NAA		ICPES		XRF		OTHER METHODS	
		Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean (n)	Mean (n)	Mean (n)	Mean (n)	Mean ± SD (n)	Method	Mean ± SD (n)	Method
In	ng/g	---		43.6	(1)	---		43.6	(1)	---		---		---	---	3.41 ± 0.13 (4)	TGCS
K	%	3.45 ± 0.02		3.38 ± 0.10	(8)	3.34	3.28 - 3.58	3.35	(2)	3.34 (1)	3.4 (1)	3.34 (1)	3.4 (1)	---	---	---	---
La	ug/g	---		33 ± 4	(8)	33	27.95 - 37.8	33 ± 4	(7)	31 (1)	24 (1)	31 (1)	24 (1)	---	---	---	---
Li	ug/g	---		47	(1)	---		---		47 (1)	---	47 (1)	---	---	---	---	---
Lu	ng/g	730		820 ± 95	(7)	820	710 - 947	840 ± 90	(6)	710 (1)	---	710 (1)	---	---	---	---	---
Mg	ug/g	1400		1485	(2)	---	1430 - 1540	---		1430 (1)	1540 (1)	1430 (1)	1540 (1)	---	---	---	---
Mn	ug/g	400 ± 15		390 ± 21	(9)	382	367 - 430	386 ± 21	(4)	373 (1)	395 (1)	373 (1)	395 (1)	397 ± 28 (3)	TGCS	397 ± 28 (3)	TGCS
Mo	ug/g	---		3.2 ± 1.0	(3)	3.73	2 - 3.73	3.73	(2)	2 (1)	---	2 (1)	---	---	---	---	---
Na	%	3.59 ± 0.04		3.50 ± 0.04	(7)	3.49	3.44 - 3.56	3.45 ± 0.11	(4)	3.44 (1)	3.56 (1)	3.44 (1)	3.56 (1)	3.51 (2)	TGCS	3.51 (2)	TGCS
Nb	ug/g	---		16	(2)	---	12.7 - 18.4	---		12.7 (1)	18.4 (1)	12.7 (1)	18.4 (1)	---	---	---	---
Nd	ug/g	---		29 ± 2	(7)	29.5	26 - 33.5	29 ± 3	(4)	28.6 (1)	---	28.6 (1)	---	30 (2)	TGCS	30 (2)	TGCS
Ni	ug/g	3.6 ± 0.3		12	(2)	---	4 - 19	---		4 (1)	19 (1)	4 (1)	19 (1)	---	---	---	---
P	ug/g	160 ± 13		140	(2)	---	110 - 170	---		170 (1)	110 (1)	170 (1)	110 (1)	---	---	---	---
Pb	ug/g	16.4 ± 0.2		17	(2)	---	16.22 - 18	---		18 (1)	---	18 (1)	---	16.22 (1)	IDMS	16.22 (1)	IDMS
Pr	ug/g	---		8	(2)	---	7.48 - 8.6	7.48	(1)	8.6 (1)	---	8.6 (1)	---	---	---	---	---
Rb	ug/g	127.5 ± 0.3		133 ± 6	(6)	130	128.4 - 143.17	135 ± 6	(4)	135 ± 6 (4)	---	135 ± 6 (4)	---	128.7 (2)	---	128.7 (2)	---
Sb	ug/g	1.5		1.72 ± 0.13	(5)	1.7	1.59 - 1.9	1.72 ± 0.13	(5)	1.72 ± 0.13 (5)	---	1.72 ± 0.13 (5)	---	---	---	---	---
Sc	ug/g	5.1		5.1 ± 0.5	(8)	5.1	4.16 - 6	5.16 ± 0.14	(6)	6 (1)	---	6 (1)	---	---	---	---	---
Si	%	34.11 ± 0.06		33.4 ± 0.6	(4)	33.1	33.1 - 34.25	---		---		34.25 (1)	33.13 ± 0.06 (3)	TGCS	33.13 ± 0.06 (3)	TGCS	
Sm	ug/g	5.7		5.8 ± 0.2	(11)	5.8	5.45 - 6.2	5.81 ± 0.13	(5)	6.8 (1)	---	6.8 (1)	---	5.8 ± 0.29 (6)	TGCS	5.8 ± 0.29 (6)	TGCS
Sr	ug/g	63.5 ± 0.1		61 ± 3	(4)	60	58 - 66	58	(1)	60 (1)	63.9 (2)	60 (1)	63.9 (2)	---	---	---	---
Ta	ug/g	1.2		1.28 ± 0.06	(4)	1.23	1.23 - 1.34	1.28 ± 0.06	(4)	---		---		---	---	---	---
Tb	ug/g	1		1.10 ± 0.16	(6)	1.12	0.8 - 1.23	1.10 ± 0.16	(6)	---		---		---	---	---	---
Th	ug/g	12.4 ± 0.3		12.8 ± 0.4	(7)	12.8	12.27 - 13.2	12.7 ± 0.4	(6)	13 (1)	---	13 (1)	---	---	---	---	---
Ti	ug/g	1470 ± 40		1420 ± 70	(6)	1420	1330 - 1500	---		1480 (1)	1420 (1)	1480 (1)	1420 (1)	1400 ± 90 (4)	TGCS	1400 ± 90 (4)	TGCS
Tl	ng/g	540 ± 40		---		---	---	---		---		---		---	---	---	---
Tm	ng/g	---		340 ± 50	(3)	330	301 - 400	340 ± 50	(3)	500 (1)	---	500 (1)	---	---	---	---	---
U	ug/g	4.58 ± 0.04		4.53 ± 0.23	(10)	4.51	4.20 - 4.96	4.58 ± 0.23	(8)	---		---		4.51 (1)	IDMS	4.51 (1)	IDMS
U	ug/g	---		---		---	---	---		---		---		4.21 (1)	FLUOR	4.21 (1)	FLUOR
V	ug/g	---		15 ± 8	(3)	12	8 - 24	12	(1)	8 (1)	24 (1)	8 (1)	24 (1)	---	---	---	---
Y	ug/g	---		4.1 ± 3	(3)	4.1	38.3 - 44.5	---		38.3 (1)	42.75 (2)	38.3 (1)	42.75 (2)	---	---	---	---
Yb	ug/g	4.5		4.5 ± 0.6	(8)	4.68	3.58 - 5.09	4.5 ± 0.6	(7)	4.68 (1)	---	4.68 (1)	---	---	---	---	---
Zn	ug/g	55		54 ± 4	(4)	54	47.8 - 57.4	55.7	(2)	47.8 (1)	57 (1)	47.8 (1)	57 (1)	---	---	---	---
Zr	ug/g	---		295 ± 11	(5)	290	285 - 311	298	(2)	290 (1)	295.4 (2)	290 (1)	295.4 (2)	---	---	---	---

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
7.43	0.57	ITNA	82GRA	01	6000	1000	TCGS	82GRA	01
7.55	0.08	TCGS	83AND	01	7000	570	ITNA	85GLA	01
7.55	0.08	TCGS	85AND	01	7080	50	WXRF	85GLA	01
7.56	0.06	WXRF	85GLA	01	7100	300	TCGS	85AND	01
7.62	0.11	ITNA	85GLA	01	7100	300	TCGS	83AND	01
7.78	0.08	ICPES	83CRO	01	7200	100	ICPES	83CRO	01
7.8	0.2	TCGS	82GRA	01	7300	300	TCGS	82VOG	01
					7500	1200	ITNA	82GRA	01
<u>As (ug/g)</u>									
4.68	0.13	ITNA	81AHM	01	<u>Cd (ng/g)</u>				
5.06	1.29	ITNA	82GRA	01	180	60	TCGS	85AND	01
5.1	0.88	ITNA	82VOG	01	180	60	TCGS	83AND	01
<u>Au (ng/g)</u>									
1.6	0.8	ITNA	82GRA	01	54.4	2.2	ITNA	84ODD	01
2.64	0.52	ITNA	82VOG	01	55.8	0.3	ITNA	84ODD	01
					56.5	1.9	ITNA	81AHM	01
<u>B (ug/g)</u>									
21		OES	83MIL	01	56.5	2.9	ITNA	80AHM	01
24.1	0.4	TCGS	83AND	01	59.4	6.8	ITNA	82GRA	01
24.9	0.5	TCGS	82VOG	01	61	1	ICPES	83CRO	01
25.2	0.4	TCGS	82GRA	01	66.5	9.3	ITNA	82VOG	01
26	3	TCGS	84GLA	01	68	1	ITNA	85GLA	01
27.9	0.4	TCGS	85AND	01	90	30	WXRF	85GLA	01
<u>Cl (ug/g)</u>									
					610	7	TCGS	85AND	01
600	160	WXRF	85GLA	01	610	7	TCGS	83AND	01
885	54	ITNA	81AHM	01	627	14	ISe	86ELS	01
928	9	ICPES	83CRO	01	640	90	TCGS	82GRA	01
1050	40	ITNA	85GLA	01	<u>Co (ug/g)</u>				
1060	40	ITNA	82VOG	01	1.85	0.18	ITNA	82GRA	01
1080	58	ITNA	82GRA	01	1.89	0.31	ITNA	82VOG	01
<u>Be (ug/g)</u>									
1.4		OES	83MIL	01	2	1	ICPES	83CRO	01
2.4	0.1	ICPES	83CRO	01	2.04	0.22	ITNA	81AHM	01
					2.08	0.1	ITNA	85GLA	01
<u>Br (ug/g)</u>									
2.61	0.62	ITNA	82GRA	01	2.6	2.7	WXRF	85GLA	01
2.65	0.2	ITNA	81AHM	01	2.7	0.2	ITNA	84GLA	11
2.99	1.01	ITNA	82VOG	01	<u>Cr (ug/g)</u>				
					5	0.5	ICPES	83CRO	01
					6.34	0.93	ITNA	82GRA	01
					6.42	0.28	ITNA	82VOG	01
					6.79	0.44	ITNA	81AHM	01
					7.5	1.2	ITNA	86GAU	01

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Cs (ug/g)</u>					<u>FEo (%)</u>				
4.9			ITNA	86GAU 01	1.35			TITR	84GOL 01
4.91	0.14		ITNA	84GLA 11	1.42	0.1		COLOR	85GLA 01
4.92	0.34		ITNA	82GRA 01					
5.12	0.44		ITNA	81AHM 01					
5.3	0.25		ITNA	82VOG 01	<u>Ga (ug/g)</u>				
5.3	0.7		ITNA	84GLA 02	10	3		ITNA	82GRA 01
5.46	0.07		ITNA	85GLA 01	12.47	2.53		ITNA	82VOG 01
					22	4		ICPES	83CRO 01
<u>Cu (ug/g)</u>					<u>Gd (ug/g)</u>				
<	5		ICPES	83CRO 01	4.5			ITNA	82GRA 01
<u>Dy (ug/g)</u>					4.96	0.08		TCGS	83AND 01
6.2	0.1		ITNA	84ODD 01	5.28	0.06		TCGS	82VOG 01
6.51	0.2		RTNA	84ODD 01	5.34	0.08		TCGS	82GRA 01
6.8	0.4		ICPES	83CRO 01	5.5	0.5	4	TCGS	85GLA 05
					5.65	0.07		ITNA	84ODD 01
<u>Er (ug/g)</u>					5.7	0.03		RTNA	84ODD 01
3.66	0.07		RTNA	84ODD 01	5.9	0.5	4	TCGS	85GLA 05
4.1	0.3		ICPES	83CRO 01	5.95	0.08		TCGS	85AND 01
<u>Eu (ng/g)</u>					6.1	0.3		ICPES	83CRO 01
764	56		ITNA	82GRA 01	37.74	1.5		ITNA	80AHM 01
770	30		ICPES	83CRO 01	37.74	1.5		ITNA	81AHM 01
780	20		RTNA	84ODD 01	<u>H (ug/g)</u>				
790	40		ITNA	85GLA 01	530	45		TCGS	83AND 01
796	9		ITNA	82VOG 01	550	50		TCGS	85AND 01
820	30		ITNA	80AHM 01	890	120		TCGS	82VOG 01
820	30		ITNA	81AHM 01	<u>H2O+ (%)</u>				
830	20		ITNA	84ODD 01	0.3	0.02		COUL	85GLA 01
<u>Fe (%)</u>					<u>H2O- (%)</u>				
1.14	0.23		ITNA	81AHM 01	0.05	0.01		COUL	85GLA 01
1.32	0.17		TCGS	82GRA 01					
1.39	0.05		TCGS	83AND 01	<u>Hf (ug/g)</u>				
1.39	0.05		TCGS	85AND 01	6.41	0.24		ITNA	81AHM 01
1.45	0.02		WXRF	85GLA 01	8.6	0.2		ITNA	85GLA 01
1.47	0.01		ICPES	83CRO 01	8.82	0.73		ITNA	82GRA 01
1.52	0.05		ITNA	82GRA 01	8.86	0.73		ITNA	82VOG 01
1.54	0.01		ITNA	82VOG 01	<u>Ho (ug/g)</u>				
1.55	0.04		ITNA	85GLA 01	1.2	0.04		RTNA	84ODD 01
1.55	0.06		TCGS	82VOG 01	1.23	0.06		ITNA	84ODD 01
<u>FE203 (%)</u>					1.5	0.1		ICPES	83CRO 01
0.49	0.11		CALC	85GLA 01					

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference																				
<u>In (ng/g)</u>																													
43.6	2.7	ITNA	81AHM	01	367	15	ITNA	82VOG	01																				
<u>K (%)</u>																													
3.28	0.11	ITNA	85GLA	01	370	15	ITNA	85GLA	01																				
3.31	0.01	TCGS	83AND	01	373	3	ICPES	83CRO	01																				
3.31	0.01	TCGS	85AND	01	380	50	TCGS	83AND	01																				
3.34	0.03	ICPES	83CRO	01	382	52	TCGS	85AND	01																				
3.4	0.01	WXRF	85GLA	01	395	40	WXRF	85GLA	01																				
3.42	0.34	ITNA	82GRA	01	400	50	ITNA	82GRA	01																				
3.44	0.08	TCGS	82GRA	01	409	15	ITNA	81AHM	01																				
3.58	0.7	TCGS	82VOG	01	430	70	TCGS	82GRA	01																				
4.23	0.13	ITNA	81AHM	01	<u>Mn (ug/g)</u>																								
<u>La (ug/g)</u>										2	1	ICPES	83CRO	01															
24	6	WXRF	85GLA	01	3.73	0.52	ITNA	82VOG	01	<u>Mo (ug/g)</u>																			
27.59	0.38	ITNA	81AHM	01	3.73	0.52	ITNA	82GRA	01	<u>Na (%)</u>																			
27.6	0.4	ITNA	80AHM	01	2.6	0.2	TCGS	82GRA	01	27.59	0.38	ITNA	82VOG	01	<u>Na (%)</u>														
31	0.7	ICPES	83CRO	01	3.3	0.4	ITNA	82VOG	01	31	0.7	ICPES	83CRO	01	<u>Na (%)</u>														
33	3	ITNA	85GLA	01	3.44	0.02	ICPES	83CRO	01	33	3	ITNA	82GRA	01	<u>Na (%)</u>														
35.4	2.5	ITNA	82GRA	01	3.46	0.26	ITNA	82GRA	01	35.4	2.5	ITNA	82GRA	01	<u>Na (%)</u>														
35.8	1.5	ITNA	82VOG	01	3.49	0.01	ITNA	85GAU	04	35.8	1.5	ITNA	85GAU	04	<u>Na (%)</u>														
37.6	0.8	ITNA	84ODD	01	3.51	0.05	TCGS	85AND	01	37.6	0.8	ITNA	84ODD	01	<u>Na (%)</u>														
37.8	0.8	RTNA	84ODD	01	3.51	0.05	TCGS	83AND	01	37.8	0.8	RTNA	84ODD	01	<u>Na (%)</u>														
<u>Li (ug/g)</u>										3.56	0.02	WXRF	85GLA	01	<u>Nb (ug/g)</u>														
47	1	ICPES	83CRO	01	3.56	0.03	ITNA	85GLA	01	47	1	ICPES	83CRO	01	12.7	0.9	ICPES	83CRO	01	<u>Nb (ug/g)</u>									
<u>Lu (ng/g)</u>										3.56	0.23	ITNA	81AHM	01	18.4	1.5	WXRF	84KYL	01	<u>Nd (ug/g)</u>									
710	10	ICPES	83CRO	01	3.9	0.23	ITNA	81AHM	01	710	10	ICPES	83CRO	01	26	4	ITNA	85GLA	01	<u>Nd (ug/g)</u>									
740	50	ITNA	80AHM	01	28.2	1	ITNA	82GRA	01	740	50	ITNA	82GRA	01	28.6	0.9	ICPES	83CRO	01	<u>Nd (ug/g)</u>									
745	310	ITNA	81AHM	01	28.6	0.9	ITNA	84ODD	01	745	310	ITNA	81AHM	01	29.5	0.3	ITNA	84ODD	01	<u>Nd (ug/g)</u>									
820	39	ITNA	82VOG	01	30	5	TCGS	83AND	01	820	39	ITNA	82VOG	01	30	5	TCGS	85AND	01	<u>Nd (ug/g)</u>									
836	50	ITNA	82GRA	01	30	5	TCGS	84KYL	01	836	50	ITNA	82GRA	01	33.5	0.02	RTNA	84ODD	01	<u>Nd (ug/g)</u>									
934	2	RTNA	84ODD	01	33.5	0.02	RTNA	84ODD	01	934	2	RTNA	84ODD	01	4	2	ICPES	83CRO	01	<u>Ni (ug/g)</u>									
947	2	ITNA	84ODD	01	19	50	WXRF	85GLA	01	947	2	ITNA	84ODD	01	19	50	WXRF	85GLA	01	<u>Ni (ug/g)</u>									

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>P (ug/g)</u>											
110	20	WXRF	85GLA	01		5.45	0.03	TCGS	83AND	01	
170	10	ICPES	83CRO	01		5.61	0.05	TCGS	82VOG	01	
<u>Pb (ug/g)</u>											
16.22	0.037	IDMS	86FIS	01		5.66	0.1	TCGS	82GRA	01	
18	3	ICPES	83CRO	01		5.69	0.62	ITNA	82GRA	01	
<u>Pr (ug/g)</u>											
7.48	0.08	RTNA	84ODD	01		5.7	0.7	ITNA	82VOG	01	
8.6	0.8	ICPES	83CRO	01		5.8	0.03	RTNA	84ODD	01	
<u>Rb (ug/g)</u>											
128.4	1	WXRF	84KYL	01		5.85	0.6	TCGS	85GLA	05	
129	7	WXRF	85GLA	01		6	0.7	ITNA	85GLA	01	
130	5	ITNA	85GLA	01		6.08	0.03	TCGS	85AND	01	
130	12	ITNA	82GRA	01		6.2	0.6	4	TCGS	85GLA	05
138	10	ITNA	82VOG	01		6.8	0.6	ICPES	83CRO	01	
143.17	2.63	ITNA	81AHM	01		<u>Sr (ug/g)</u>					
<u>Sb (ug/g)</u>											
1.59	0.05	ITNA	82VOG	01		58		IENA	85GAU	04	
1.61	0.13	ITNA	82GRA	01		60	3	ICPES	83CRO	01	
1.7	0.4	ITNA	81AHM	01		61.8	1	WXRF	84KYL	01	
1.8	0.1	ITNA	85GLA	01		66	6	WXRF	85GLA	01	
1.9		ITNA	84GLA	02		<u>Ta (ug/g)</u>					
<u>Sc (ug/g)</u>											
4.16	0.21	ITNA	81AHM	01		1.23	0.16	ITNA	82VOG	01	
5	0.03	ITNA	86GAU	01		1.23	0.19	ITNA	82GRA	01	
5	0.1	ITNA	84GLA	02		1.32	0.18	ITNA	81AHM	01	
5.1	0.07	ITNA	84GLA	11		1.34	0.09	ITNA	85GLA	01	
5.24	0.14	ITNA	82GRA	01		<u>Tb (ug/g)</u>					
5.3	0.1	ITNA	85GLA	01		0.8	0.02	ITNA	85GLA	01	
5.31	0.05	ITNA	82VOG	01		1.11	0.1	ITNA	84ODD	01	
6	0.5	ICPES	83CRO	01		1.12	0.22	ITNA	82VOG	01	
<u>Si (%)</u>											
33.1	0.3	TCGS	85AND	01		1.14	0.1	ITNA	82GRA	01	
33.1	0.3	TCGS	83AND	01		1.23	0.03	ITNA	81AHM	01	
33.2	0.7	TCGS	82VOG	01		1.23	0.08	ITNA	80AHM	01	
34.25	0.14	WXRF	85GLA	01		1.81	0.03	RTNA	84ODD	01	
36.6	1.3	TCGS	82GRA	01		<u>Th (ug/g)</u>					
						12.27	0.77	ITNA	81AHM	01	
						12.27	0.77	ITNA	80CHA	02	
						12.7	0.4	ITNA	86GAU	01	
						12.8	0.3	ITNA	82GRA	01	
						13	3	ICPES	83CRO	01	
						13.1	0.2	ITNA	82VOG	01	
						13.2	0.4	ITNA	85GLA	01	

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ti (ug/g)</u>									
1330	60	TCGS	85AND	01	47.8	0.4	ICPES	83CRO	01
1330	60	TCGS	83AND	01	54	2.5	ITNA	82GRA	01
1420	30	WXRF	85GLA	01	57	7	WXRF	85GLA	01
1450	90	TCGS	82GRA	01	57.4	3.6	ITNA	82VOG	01
1480	10	ICPES	83CRO	01					
1500	40	TCGS	82VOG	01					
<u>Tm (ng/g)</u>									
301	20	ITNA	81AHM	01	285	16	ITNA	82GRA	01
330	30	RTNA	84ODD	01	288.8	2	WXRF	84KYL	01
400	20	ITNA	84ODD	01	290	2	ICPES	83CRO	01
500	100	ICPES	83CRO	01	302	9	WXRF	85GLA	01
					311	50	ITNA	82VOG	01
<u>U (ug/g)</u>									
4.204	0.284	ITNA	81AHM	01					
4.21	0.12	FLUOR	86KAN	01					
4.51	0.005	IDMS	86FIS	01					
4.51	0.05	DNA	85GLA	04					
4.51	0.08	DNA	85GLA	01					
4.51	0.08	DNA	85GAU	04					
4.53	0.12	DNA	86GAU	01					
4.58		DNA	84GLA	02					
4.82	0.35	ITNA	82GRA	01					
4.96	0.33	ITNA	82VOG	01					
<u>V (ug/g)</u>									
8	1	ICPES	83CRO	01					
12	4	ITNA	85GLA	01					
24	4	WXRF	85GLA	01					
<u>Y (ug/g)</u>									
38.3	4	ICPES	83CRO	01					
41	2	WXRF	85GLA	01					
44.5	1	WXRF	84KYL	01					
<u>Yb (ug/g)</u>									
3.58	0.25	ITNA	80AHM	01					
3.58	0.25	ITNA	81AHM	01					
4.54	0.86	ITNA	82GRA	01					
4.68	0.05	ICPES	83CRO	01					
4.79	0.04	ITNA	84ODD	01					
4.8	0.2	ITNA	85GLA	01					
5.04	0.08	RTNA	84ODD	01					
5.09	0.95	ITNA	82VOG	01					

TABLE 330-1: COMPILED DATA ON NBS SRM 330 COPPER ORE, MILL HEADS (revised 3/1/86)

ELEMENT	UNITS	NBS
Ag	ug/g	1.51
Au	ng/g	93
Cu	ug/g	8400 ± 100
Mo	ug/g	180 ± 10
Re	ng/g	300 ± 60

TABLE 331-1: COMPILED DATA ON NBS SRM 331 COPPER ORE, MILL TAILS (revised 3/1/86)

ELEMENT	UNITS	NBS
Ag	ng/g	243
Au	ng/g	34
Cu	ug/g	910 ± 10
Mo	ug/g	22 ± 2
Re	ng/g	40 ± 20

TABLE 332-1: COMPILED DATA ON NBS SRM 332 COPPER CONCENTRATE (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
Ag	ug/g	38.7	---	---
Au	ug/g	2.14	---	---
Cu	%	28.4 ± 0.1	---	---
Mo	ug/g	6400 ± 100	---	---
Re	ug/g	10.2 ± 0.2	10.2 (1)	PROBE

TABLE 332-2: INDIVIDUAL DATA FOR NBS SRM 332 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Re (ug/g)</u>				
10.2	1.8		PROBE	85HAS 01

TABLE 333-1: COMPILED DATA ON NBS SRM 333 MOLYBDENUM CONCENTRATE (revised 3/1/86)

ELEMENT	UNITS	NBS
Ag	ug/g	25
Au	ug/g	8.9
Cu	%	1.038 ± 0.01
Mo	%	55.3 ± 0.1
Re	ug/g	870 ± 10

TABLE 610-1: COMPILED DATA FOR NBS SRM 610 TRACE ELEMENTS IN GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Method
Ag	ug/g	254 ± 10	180	(1)	---	---	180	(1)	NAA
As	ug/g	---	305	(1)	---	---	305	(1)	SSMS
Au	ug/g	25	20	(1)	---	---	20	(1)	NAA
B	ug/g	351	357 ± 9	(5)	358	348 - 368	356 ± 8	(3)	TCGS
B	ug/g	---	---		---	---	358	(2)	ICPES
B-10	atom %	---	19.827	(1)	---	---	19.827	(1)	IDMS
Ba	ug/g	---	638	(1)	---	---	638	(1)	SSMS
Be	ug/g	---	450	(1)	---	---	450	(1)	CPAA
Bi	ug/g	---	405	(1)	---	---	405	(1)	SSMS
Ca	%	8.6	7.64	(1)	---	---	7.64	(1)	SSMS
Cd	ug/g	---	187	(1)	---	---	187	(1)	SSMS
Ce	ug/g	---	318	(1)	---	---	318	(1)	SSMS
Co	ug/g	390	389 ± 22	(9)	390	360 - 420	391 ± 23	(8)	PROBE
Co	ug/g	---	---		---	---	375	(1)	SSMS
Cr	ug/g	---	410 ± 60	(9)	380	340 - 510	420 ± 60	(8)	PROBE
Cr	ug/g	---	---		---	---	371	(1)	SSMS
Cu	ug/g	444 ± 4	380 ± 100	(8)	360	230 - 510	380 ± 100	(8)	PROBE
Fe	ug/g	458 ± 9	460	(1)	---	---	460	(1)	POL
Ga	ug/g	---	481	(1)	---	---	481	(1)	SSMS
Ge	ug/g	---	496	(1)	---	---	496	(1)	SSMS
Hf	ug/g	---	220	(1)	---	---	220	(1)	SSMS
In	ug/g	---	319	(1)	---	---	319	(1)	SSMS
K	ug/g	461	---		---	---	---		
Li	ug/g	---	354	(1)	---	---	354	(1)	CPAA
Mg	ug/g	---	472	(1)	---	---	472	(1)	SSMS
Mn	ug/g	485 ± 10	480 ± 50	(9)	490	391 - 550	495 ± 40	(8)	PROBE
Mn	ug/g	---	---		---	---	391	(1)	SSMS
Mo	ug/g	---	307	(1)	---	---	307	(1)	SSMS
Ni	ug/g	458.7 ± 4	480 ± 50	(8)	470	431 - 550	490 ± 50	(6)	PROBE
Ni	ug/g	---	---		---	---	450	(1)	POL
Ni	ug/g	---	---		---	---	431	(1)	SSMS
Pb	ug/g	426 ± 1	418 ± 17	(4)	425.58	392 - 427	426.2 ± 0.7	(3)	IDMS
Pb	ug/g	---	---		---	---	392	(1)	SSMS
Rb	ug/g	425.7 ± 0.8	425.7	(1)	---	---	425.7	(1)	IDMS
Sb	ug/g	---	387	(1)	---	---	387	(1)	SSMS
Sr	ug/g	515.5 ± 0.5	515.5	(1)	---	---	515.5	(1)	IDMS
Ta	ug/g	---	206	(1)	---	---	206	(1)	SSMS
Te	ug/g	---	259	(1)	---	---	259	(1)	SSMS
Th	ug/g	457.2 ± 1.2	460 ± 7	(3)	457.23	455.4 - 469	456.3	(2)	IDMS
Th	ug/g	---	---		---	---	469	(1)	SSMS
Ti	ug/g	437	490 ± 70	(10)	530	361 - 560	520 ± 50	(8)	PROBE
Ti	ug/g	---	---		---	---	434	(1)	POL
Ti	ug/g	---	---		---	---	361	(1)	SSMS
Tl	ug/g	61.8 ± 2.5	57	(2)	---	52 - 61.8	52	(1)	SSMS
Tl	ug/g	---	---		---	---	61.8	(1)	IDMS
U	ug/g	461.5 ± 1.1	453 ± 22	(7)	461.5	413 - 471	457 ± 23	(3)	NAA
U	ug/g	---	---		---	---	461.4	(2)	IDMS
U	ug/g	---	---		---	---	413	(1)	SSMS
U	ug/g	---	---		---	---	462.8	(1)	NT
U-234	atom %	---	0.0010	(1)	---	---	0.0010	(1)	IDMS
U-235	atom %	0.2376	0.2376	(2)	---	0.2376 - 0.2376	0.2376	(2)	IDMS
U-235/238	ratio	0.0024	0.0025 ± 0.0001	(4)	0.0024	0.0023 - 0.0026	0.0025 ± 0.0001	(4)	NAA
U-236	atom %	---	0.0043	(1)	---	---	0.0043	(1)	IDMS
U-238	atom %	---	99.7571	(1)	---	---	99.7571	(1)	IDMS
V	ug/g	---	490 ± 60	(8)	460	410 - 560	490 ± 60	(8)	PROBE
Zn	ug/g	433	500 ± 140	(6)	500	320 - 650	500 ± 140	(6)	PROBE

TABLE 610-2: INDIVIDUAL DATA FOR NBS SRM 610 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ag (ug/g)</u>									
180	80		ITNA	73SHE 01	135	14		ITNA	73SHE 01
<u>As (ug/g)</u>									
305	20		SSMS	74BER 01	360	60	6	PROBE	71HEI 02
<u>Au (ug/g)</u>									
20	2		ITNA	73SHE 01	360	90	6	PROBE	71HEI 02
<u>B (ug/g)</u>									
348	13.6		ICPES	85ZAC 01	375	12		SSMS	74BER 01
348	20	6	TCGS	76GLA 01	390	90	6	PROBE	71HEI 02
358	15	6	TCGS	76GLA 01	390	100	6	PROBE	71HEI 02
363	17	6	TCGS	76GLA 01	390	110	6	PROBE	71HEI 02
368	12		ICPES	820WE 01	400	130	6	PROBE	71HEI 02
<u>B-10 (atom %)</u>									
19.827			IDMS	72CAR 01	420	140	6	PROBE	71HEI 02
<u>Be (ug/g)</u>									
638	24		SSMS	74BER 01	420	15		SSMS	74BER 01
<u>Cd (ug/g)</u>									
187	21		SSMS	74BER 01	380	140	6	PROBE	71HEI 02
<u>Ce (ug/g)</u>									
318	14		SSMS	74BER 01	440	40	6	PROBE	71HEI 02
<u>Co (ug/g)</u>									
135					360	40	6	PROBE	71HEI 02
<u>Cr (ug/g)</u>									
340					360	40	6	PROBE	71HEI 02
<u>Fe (ug/g)</u>									
460					370	100	6	PROBE	71HEI 02
<u>Ga (ug/g)</u>									
481					371	15		SSMS	74BER 01
<u>Ge (ug/g)</u>									
496					380	140	6	PROBE	71HEI 02
<u>Hf (ug/g)</u>									
220					440	40	6	PROBE	71HEI 02

TABLE 610-2: INDIVIDUAL DATA FOR NBS SRM 610 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>In (ug/g)</u>					<u>Sb (ug/g)</u>				
319	11		SSMS	74BER 01	387	18		SSMS	74BER 01
<u>Li (ug/g)</u>					<u>Sr (ug/g)</u>				
354	27		CPAA	82LAS 01	515.5	0.3		IDMS	73MOO 01
<u>Mg (ug/g)</u>					<u>Ta (ug/g)</u>				
472	22		SSMS	74BER 01	206	9		SSMS	74BER 01
<u>Mn (ug/g)</u>					<u>Te (ug/g)</u>				
391	7		SSMS	74BER 01	259	21		SSMS	74BER 01
440	90	6	PROBE	71HEI 02	<u>Th (ug/g)</u>				
450	90	6	PROBE	71HEI 02	455.4	1.6	17	IDMS	73BAR 01
480	100	6	PROBE	71HEI 02	457.23	0.52	17	IDMS	73BAR 01
490	40	6	PROBE	71HEI 02	469	7		SSMS	74BER 01
490	70	6	PROBE	71HEI 02	<u>Ti (ug/g)</u>				
530	70	6	PROBE	71HEI 02	361	18		SSMS	74BER 01
530	80	6	PROBE	71HEI 02	430	50	6	PROBE	71HEI 02
550	100	6	PROBE	71HEI 02	434	10		POL	73MAI 01
<u>Mo (ug/g)</u>					440	30	6	PROBE	71HEI 02
307	19		SSMS	74BER 01	530	80	6	PROBE	71HEI 02
<u>Ni (ug/g)</u>					540	70	6	PROBE	71HEI 02
431	10		SSMS	74BER 01	540	80	6	PROBE	71HEI 02
440	50	6	PROBE	71HEI 02	550	70	6	PROBE	71HEI 02
450	7		POL	73MAI 01	550	100	6	PROBE	71HEI 02
450	50	6	PROBE	71HEI 02	560	110	6	PROBE	71HEI 02
470	70	6	PROBE	71HEI 02	<u>Tl (ug/g)</u>				
480	80	6	PROBE	71HEI 02	52	35		SSMS	74BER 01
550	140	6	PROBE	71HEI 02	61.8	1		IDMS	73BAR 01
550	180	6	PROBE	71HEI 02	<u>U (ug/g)</u>				
940	420	6	PROBE	71HEI 02	413	18		SSMS	74BER 01
950	220	6	PROBE	71HEI 02	430			DNA	84GLA 02
<u>Pb (ug/g)</u>					461.3	1	17	IDMS	73BAR 01
392	11		SSMS	74BER 01	461.3	1.7	D	IDMS	72CAR 01
425.58	0.4	17	IDMS	73BAR 01	461.5	0.4	17	IDMS	73BAR 01
426.15	0.41	17	IDMS	73BAR 01	461.5	1.1	D	IDMS	72CAR 01
427	1		IDMS	83BRO 01	462.8	13.8		NT	72CAR 01
<u>Rb (ug/g)</u>					470	90	17	DNA	82CON 01
425.7	0.7		IDMS	73MOO 01	471	28	17	DNA	82CON 01

TABLE 610-2: INDIVIDUAL DATA FOR NBS SRM 610 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>U-234 (atom %)</u>					<u>V (ug/g)</u>				
0.001		IDMS	73BAR	01	206	10		SSMS	74BER 01
<u>U-235 (atom %)</u>					410	70	6	PROBE	71HEI 02
0.2376		IDMS	73BAR	01	430	70	6	PROBE	71HEI 02
0.2376	0.0004	IDMS	72CAR	01	450	100	6	PROBE	71HEI 02
<u>U-235/238 (ratio)</u>					460	40	6	PROBE	71HEI 02
0.0023		RTNA	86GAU	01	500	80	6	PROBE	71HEI 02
0.0024	0.0001	RTNA	85GAU	04	530	70	6	PROBE	71HEI 02
0.0025	0.0001	RTNA	84GLA	02	550	70	6	PROBE	71HEI 02
0.0026	0.0001	RTNA	84GLA	11	560	110	6	PROBE	71HEI 02
<u>U-236 (atom %)</u>					<u>Zn (ug/g)</u>				
0.0043		IDMS	73BAR	01	320	130	6	PROBE	71HEI 02
99.7571		IDMS	73BAR	01	320	150	6	PROBE	71HEI 02
					500	140	6	PROBE	71HEI 02
					590	170	6	PROBE	71HEI 02
					600	190	6	PROBE	71HEI 02
					650	140	6	PROBE	71HEI 02

TABLE 612-1: COMPILED DATA FOR NBS SRM 612 TRACE ELEMENTS IN GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	NAA		OTHER METHODS		
		Mean ± SD	(n)	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Method
Ag	ug/g	22 ± 0.3		26	(2)	---	20 - 31	31	(1)	20	(1)	AA
Al	%	1.1		1.11	(1)	---	---	1.11	(1)	---		
As	ug/g	---		47	(2)	---	35.6 - 58.1	58.1	(1)	35.6	(1)	PAA
Au	ug/g	5		5.09 ± 0.16	(3)	5	5 - 5.27	5.09 ± 0.16	(3)	---		
B	ug/g	32		33 ± 5	(4)	31	27.8 - 40	---		33.9	(2)	ICPES
B	ug/g	---		---		---	---	---		31	(1)	TCGS
B	ug/g	---		---		---	---	---		32.39	(1)	NT
B-10	atom %	---		19.827	(1)	---	---	---		19.827	(1)	IDMS
Ba	ug/g	41		36.5	(1)	---	---	36.5	(1)	---		
Be	ug/g	---		31	(1)	---	---	---		31	(1)	CPAA
Br	ug/g	---		< 1.4		---	---	< 1.4		---		
Ca	%	8.6		8.72	(2)	---	8.65 - 8.79	8.79	(1)	8.65	(1)	PAA
Ce	ug/g	39		41 ± 3	(4)	40.6	37 - 45.3	41.15	(2)	40.6	(1)	PAA
Co	ug/g	35.5 ± 1.2		35 ± 3	(5)	34.3	31 - 37.47	35 ± 3	(4)	33.3	(1)	PAA
Cr	ug/g	---		110	(2)	---	65.9 - 155	110	(2)	---		
Cs	ug/g	---		43 ± 2	(3)	43	41.1 - 44.8	42.0	(2)	44.8	(1)	PAA
Cu	ug/g	37.7 ± 0.9		37	(1)	---	---	37	(1)	---		
Dy	ug/g	35		37	(1)	---	---	37	(1)	---		
Er	ug/g	39		---		---	---	---		---		
Eu	ug/g	36		31 ± 5	(3)	32.86	26 - 35.3	31 ± 5	(3)	---		
Fe	ug/g	51 ± 2		56	(2)	---	51.3 - 60	60	(1)	51.3	(1)	POL
Gd	ug/g	39		37	(2)	---	36 - 38	---		37	(2)	TCGS
Hf	ug/g	---		42	(2)	---	32.2 - 52.29	42.2	(2)	---		
K	ug/g	64		---		---	---	---		---		
La	ug/g	36		38	(2)	---	35 - 40.2	37.6	(2)	---		
Li	ug/g	---		44	(1)	---	---	---		44	(1)	CPAA
Lu	ug/g	---		36.8	(1)	---	---	36.8	(1)	---		
Mg	ug/g	---		341	(1)	---	---	---		341	(1)	PAA
Mn	ug/g	39.6 ± 0.8		38.6	(2)	---	38.2 - 39	38.2	(1)	39	(1)	PAA
Na	%	10.4		10.6	(2)	---	10.5 - 10.68	10.68	(1)	10.5	(1)	PAA
Nb	ug/g	---		38.1	(1)	---	---	---		38.1	(1)	PAA
Nd	ug/g	36		---		---	---	---		---		
Ni	ug/g	38.8 ± 0.2		40.1	(1)	---	---	---		40.1	(1)	PAA
Pb	ug/g	38.57 ± 0.2		38.58 ± 0.16	(5)	38.56	38.37 - 38.83	---		38.6 ± 0.2	(5)	IDMS
Pb	ug/g	---		---		---	---	---		36.3	(1)	AA
Rb	ug/g	31.4 ± 0.4		32 ± 2	(5)	31.7	31.41 - 36	36	(1)	32	(1)	PAA
Rb	ug/g	---		---		---	---	---		31.425	(2)	IDMS
Sb	ug/g	---		39 ± 6	(3)	39.4	32.2 - 45.2	38.7	(2)	39.4	(1)	PAA
Sc	ug/g	---		38 ± 3	(3)	38.2	34 - 40.35	37.2	(2)	38.2	(1)	PAA
Si	%	33.6		34.04	(1)	---	---	34.04	(1)	---		
Sm	ug/g	39		35 ± 4	(3)	32.8	32.7 - 39.6	39.6	(1)	32.75	(2)	TCGS
Sr	ug/g	78.4 ± 0.2		77.6 ± 1.0	(4)	77.3	76.3 - 78.38	---		77.3	(1)	PAA
Sr	ug/g	---		---		---	---	---		78.345	(2)	IDMS
Sr-87/86	ratio	---		0.70907	(1)	---	---	---		0.70907	(1)	IDMS
Ta	ug/g	---		44	(2)	---	36.33 - 52.7	44.5	(2)	---		
Tb	ug/g	---		37	(2)	---	22 - 52.96	37.5	(2)	---		
Th	ug/g	37.79 ± 0.08		36 ± 3	(5)	37.55	31 - 38.43	35 ± 4	(3)	37.67	(2)	IDMS
Ti	ug/g	50.1 ± 0.8		53	(2)	---	50 - 55.2	---		55.2	(1)	PAA
Ti	ug/g	---		---		---	---	---		50	(1)	POL
Tl	ug/g	15.7 ± 0.3		15.7	(1)	---	---	---		15.68	(1)	IDMS
U	ug/g	37.38 ± 0.08		37.5 ± 1.3	(9)	37.37	35.74 - 40	40 ± 3	(4)	37.4 ± 0.1	(4)	IDMS
U	ug/g	---		---		---	---	---		36.32	(2)	NT
U-235	atom %	0.2392		0.2392	(1)	---	---	---		0.2392	(1)	IDMS
U-235/238	ratio	---		0.0023	(1)	---	---	0.00229	(1)	---		
V	ug/g	---		58.6	(1)	---	---	58.6	(1)	---		
Y	ug/g	---		37.9	(1)	---	---	---		37.9	(1)	PAA
Yb	ug/g	42		48	(2)	---	40 - 55	47.5	(2)	---		
Zr	ug/g	---		41.8	(1)	---	---	---		41.8	(1)	PAA

TABLE 612-2: INDIVIDUAL DATA FOR NBS SRM 612 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference										
<u>Ag (ug/g)</u>																			
20	1	FAA	84HEA	01	31	1	ITNA	73SHE	01										
31	7	ITNA	73SHE	01	33.3	1	PAA	80KAN	01										
<u>Al (%)</u>																			
1.1109	0.0212	ITNA	85PEN	01	34.3	2.9	ITNA	84KUL	01										
<u>As (ug/g)</u>																			
35.6	0.3	PAA	80KAN	01	37.1	2.3	6	ITNA	73KIM	01									
58.1	7.3	ITNA	84KUL	01	37.47	4.1	6	ITNA	73KIM	01									
<u>Au (ug/g)</u>																			
5	0.2	ITNA	84KUL	01	41.1	6.6	ITNA	73KIM	01										
5	1	ITNA	73SHE	01	43	2	ITNA	84KUL	01										
5.27	0.11	ITNA	73KIM	01	44.8	1.2	PAA	80KAN	01										
<u>B (ug/g)</u>																			
27.8	2.9	ICPES	85ZAC	01	37	4	ITNA	84KUL	01										
31	3	TCGS	84GLA	01	<u>Dy (ug/g)</u>														
32.39	1.04	NT	72CAR	01	37	4	ITNA	84KUL	01										
40	4	ICPES	820WE	01	<u>Eu (ug/g)</u>														
<u>B-10 (atom %)</u>										26	1	ITNA	73SHE	01					
19.827		IDMS	72CAR	01	32.86	2.19	ITNA	73KIM	01										
<u>Ba (ug/g)</u>										35.3	1.2	ITNA	84KUL	01					
36.5	5.2	ITNA	84KUL	01	<u>Fe (ug/g)</u>														
<u>Be (ug/g)</u>										51.3	0.8	POL	73MAI	01					
31	7	CPAA	82LAS	01	60	7	ITNA	84KUL	01										
<u>Br (ug/g)</u>										<u>Gd (ug/g)</u>									
<	1.4	ITNA	84KUL	01	36	4	4	TCGS	85GLA	05									
<u>Ca (%)</u>										38	4	4	TCGS	85GLA	05				
8.65	0.14	PAA	80KAN	01	<u>Hf (ug/g)</u>														
8.79	0.72	ITNA	84KUL	01	32.2	1.6	ITNA	84KUL	01										
<u>Ce (ug/g)</u>										52.29	3.11	ITNA	73KIM	01					
37	2	ITNA	73SHE	01	<u>La (ug/g)</u>														
40.6	0.2	PAA	80KAN	01	35	15	ITNA	73SHE	01										
41.2		UU	77HAN	02	40.2	1.2	ITNA	84KUL	01										
45.3	1.5	ITNA	84KUL	01															

TABLE 612-2: INDIVIDUAL DATA FOR NBS SRM 612 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Li (ug/g)</u>					<u>Sc (ug/g)</u>				
44	8		CPAA	82LAS 01	34	3		ITNA	84KUL 01
<u>Lu (ug/g)</u>					38.2	1.2		PAA	80KAN 01
36.8	0.2		ITNA	84KUL 01	40.35	0.35		ITNA	73KIM 01
<u>Mg (ug/g)</u>					<u>Si (%)</u>				
341	< 2412		ITNA	85PEN 01	34.04	0.65		ITNA	85PEN 01
	16		PAA	80KAN 01	<u>Sm (ug/g)</u>				
<u>Mn (ug/g)</u>					32.7	3	4	TCGS	85GLA 05
38.2	1.1		ITNA	84KUL 01	32.8	3	4	TCGS	85GLA 05
39	2.6		PAA	80KAN 01	39.6	1.1		ITNA	84KUL 01
<u>Na (%)</u>					<u>Sr (ug/g)</u>				
10.5	0.15		PAA	80KAN 01	76.3			UU	77HAN 02
10.68	0.59		ITNA	84KUL 01	77.3	1.3		PAA	80KAN 01
<u>Nb (ug/g)</u>					78.31	0.09		IDMS	83LIP 01
38.1	1		PAA	80KAN 01	78.38	0.25		IDMS	73MOO 01
<u>Ni (ug/g)</u>					<u>Sr-87/86 (ratio)</u>				
40.1	1.1		PAA	80KAN 01	709.07	0.1	28	IDMS	83LIP 01
<u>Pb (ug/g)</u>					<u>Ta (ug/g)</u>				
36.3	1.5		FAA	84HEA 01	36.33	5.6		ITNA	73KIM 01
38.37	0.13		IDMS	86FIS 01	52.7	0.3		ITNA	84KUL 01
38.56	0.07	17	IDMS	73BAR 01	<u>Tb (ug/g)</u>				
38.56	0.11		IDMS	77GUL 01	22	2		ITNA	84KUL 01
38.57	0.09	17	IDMS	73BAR 01	52.96	5.62		ITNA	73KIM 01
38.83	0.04		IDMS	83BRO 01	<u>Th (ug/g)</u>				
<u>Rb (ug/g)</u>					31	1		ITNA	73SHE 01
31.41	0.08		IDMS	83LIP 01	36	2		ITNA	84KUL 01
31.44	0.31		IDMS	73MOO 01	37.55	0.04	17	IDMS	73BAR 01
31.7			UU	77HAN 02	37.79	0.017	17	IDMS	73BAR 01
32	1.4		PAA	80KAN 01	38.43	0.42		ITNA	73KIM 01
36	4		ITNA	84KUL 01	<u>Ti (ug/g)</u>				
<u>Sb (ug/g)</u>					50	0.3		POL	73MAI 01
32.2	1.6		ITNA	84KUL 01	55.2	8.3		PAA	80KAN 01
39.4	0.3		PAA	80KAN 01	<u>Tl (ug/g)</u>				
45.2	6.74		ITNA	73KIM 01	15.68	0.1		IDMS	73BAR 01

TABLE 612-2: INDIVIDUAL DATA FOR NBS SRM 612 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>U (ug/g)</u>									
35.74			NT	80VIR 01					
36.3	7.2	17	DNA	82CON 01					
36.9	1.8		NT	72CAR 01					
37.37	0.015	17	IDMS	73BAR 01					
37.37	0.064		IDMS	86FIS 01					
37.39	0.09	D	IDMS	72CAR 01					
37.41	0.09	17	IDMS	73BAR 01					
37.41	0.21	D	IDMS	72CAR 01					
37.66	0.08		IDMS	77GUL 01					
39	4.9	17	DNA	82CON 01					
40			DNA	84GLA 02					
43.6	1.6		ITNA	84KUL 01					
<u>U-235 (atom %)</u>									
0.2392	0.0004		IDMS	72CAR 01					
<u>U-235/238 (atom %)</u>									
					0.00229	0.00011		RTNA	84GLA 02
<u>V (ug/g)</u>									
					58.6	6		ITNA	84KUL 01
<u>Y (ug/g)</u>									
					37.9	1.4		PAA	80KAN 01
<u>Yb (ug/g)</u>									
					40	3		ITNA	84KUL 01
					55	7.15		ITNA	73KIM 01
<u>Zr (ug/g)</u>									
					41.8	1.1		PAA	80KAN 01

TABLE 614-1: COMPILED DATA FOR NBS SRM 614 TRACE ELEMENTS IN GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD	(n)	Mean ± SD			Mean ± SD	(n)	Method
Ag	ug/g	0.42 ± 0.04	0.52	(2)	---	0.471 - 0.57	0.57	(1)	NAA	
Ag	ug/g	---	---		---	---	0.471	(1)	AA	
Au	ng/g	500	580 ± 300	(4)	510	280 - 1000	690 ± 270	(3)	NAA	
Au	ug/g	---	---		---	---	280	(1)	AA	
B	ug/g	1.3 ± 0.2	1.14	(2)	---	0.99 - 1.29	0.99	(1)	TCGS	
B	ug/g	---	---		---	---	1.29	(1)	NT	
B-10	atom %	---	19.827	(1)	---	---	19.827	(1)	IDMS	
Br	ug/g	---	< 1		---	---	< 1		NAA	
Ca	%	8.6	7.92	(1)	---	---	7.92	(1)	NAA	
Cd	ng/g	550	---		---	---	---			
Ce	ug/g	---	1.24	(1)	---	---	1.24	(1)	NAA	
Co	ug/g	0.73 ± 0.02	1.2 ± 0.5	(4)	0.85	0.59 - 1.66	1.2 ± 0.5	(4)	NAA	
Cr	ug/g	---	1.81	(1)	---	---	1.81	(1)	NAA	
Cs	ng/g	---	720	(2)	---	590 - 860	725	(2)	NAA	
Cu	ug/g	1.37 ± 0.07	1.61	(1)	---	---	1.61	(1)	AA	
Dy	ug/g	---	1.4	(1)	---	---	1.4	(1)	NAA	
Eu	ug/g	0.99 ± 0.04	0.85 ± 0.28	(3)	0.91	0.54 - 1.10	0.85 ± 0.28	(3)	NAA	
Fe	ug/g	13.3 ± 1	13.8 ± 1.0	(3)	13.5	13 - 15	15	(1)	NAA	
Fe	ug/g	---	---		---	---	13	(1)	AA	
Fe	ug/g	---	---		---	---	13.5	(1)	POL	
Ga	ug/g	1.3	---		---	---	---			
Gd	ug/g	---	0.75	(2)	---	0.70 - 0.80	0.75	(2)	TCGS	
Hf	ug/g	---	0.88	(2)	---	0.55 - 1.2	0.88	(2)	NAA	
K	ug/g	30 ± 1	---		---	---	---			
La	ng/g	830 ± 20	680	(1)	---	---	680	(1)	NAA	
Lu	ng/g	---	630	(1)	---	---	630	(1)	NAA	
Mn	ug/g	---	< 3.8		---	---	< 3.8		NAA	
Na	%	10.4	10.39	(1)	---	---	10.39	(1)	NAA	
Ni	ug/g	0.95	0.95	(1)	---	---	0.95	(1)	POL	
Pb	ug/g	2.32 ± 0.04	2.30 ± 0.06	(4)	2.32	2.22 - 2.35	2.33 ± 0.02	(3)	IDMS	
Pb	ug/g	---	---		---	---	2.22	(1)	AA	
Rb	ug/g	0.855 ± 0.005	0.89	(2)	---	0.855 - 0.92	0.92	(1)	NAA	
Rb	ug/g	---	---		---	---	0.855	(1)	IDMS	
Sb	ug/g	1.06	1.03 ± 0.10	(3)	1.08	0.91 - 1.10	1.03 ± 0.10	(3)	NAA	
Sc	ng/g	590 ± 40	720 ± 100	(3)	680	640 - 840	720 ± 100	(3)	NAA	
Sm	ug/g	---	0.75 ± 0.12	(3)	0.69	0.68 - 0.89	0.89	(1)	NAA	
Sm	ug/g	---	---		---	---	0.68	(2)	TCGS	
Sr	ug/g	45.8 ± 0.1	45.82	(1)	---	---	45.82	(1)	IDMS	
Ta	ug/g	---	0.97	(2)	---	0.96 - 0.98	0.97	(2)	NAA	
Tb	ng/g	---	560	(2)	---	510 - 620	565	(2)	NAA	
Th	ng/g	748 ± 6	744 ± 9	(4)	746	730 - 750	740	(2)	NAA	
Th	ug/g	---	---		---	---	747.5	(2)	IDMS	
Ti	ug/g	3.1 ± 0.3	3.1	(1)	---	---	3.1	(1)	POL	
Tl	ng/g	269 ± 5	280	(2)	---	269 - 290	290	(1)	NAA	
Tl	ug/g	---	---		---	---	269	(1)	IDMS	
U	ug/g	0.823 ± 0.002	0.82 ± 0.04	(6)	0.8230	0.74 - 0.87	0.87	(1)	NAA	
U	ug/g	---	---		---	---	0.822 ± 0.005	(3)	IDMS	
U	ug/g	---	---		---	---	0.7835	(2)	NT	
U-235	atom %	0.2792	0.2792	(1)	---	---	0.2792	(1)	IDMS	
V	ug/g	---	< 13		---	---	< 13		NAA	
Yb	ug/g	---	1.06	(2)	---	0.74 - 1.38	1.06	(2)	NAA	

TABLE 614-2: INDIVIDUAL DATA FOR NBS SRM 614 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ug/g)</u>										
0.471	0.06		FAA	82JEN 02		<	9		ITNA	84KUL 01
0.57	0.07		ITNA	73SHE 01		1.61	0.32		FAA	82JEN 02
<u>Au (ng/g)</u>										
280	140		FAA	82JEN 02		1.4	0.3		ITNA	84KUL 01
510	20		ITNA	84KUL 01						
550	50		ITNA	73KIM 01						
1000	800		ITNA	73SHE 01						
<u>B (ug/g)</u>										
0.99	0.32		TCGS	84GLA 01						
1.29	0.05		NT	72CAR 01						
2.5	1.7	6	TCGS	76GLA 01						
2.6	1.5	6	TCGS	76GLA 01		13			FAA	84HEA 01
2.9	1.5	6	TCGS	76GLA 01		13.5	0.7		POL	73MAI 01
						15	2		ITNA	84KUL 01
<u>B-10 (atom %)</u>										
19.827		IDMS		72CAR 01						
<u>Br (ug/g)</u>										
<	1		ITNA	84KUL 01		0.7	0.4	4	TCGS	85GLA 05
						0.8	0.2	4	TCGS	85GLA 05
<u>Ca (%)</u>										
7.92	0.78		ITNA	84KUL 01		0.55	0.06		ITNA	84KUL 01
						1.2	0.18		ITNA	73KIM 01
<u>Ce (ug/g)</u>										
1.24	0.09		ITNA	84KUL 01		<	2000		ITNA	73SHE 01
						680	120		ITNA	84KUL 01
<u>Co (ug/g)</u>										
0.59	0.1		ITNA	73SHE 01		630	80		ITNA	84KUL 01
0.85	0.09		ITNA	84KUL 01						
1.63	0.09		ITNA	73KIM 01						
1.66	0.17		ITNA	73KIM 01						
<u>Cr (ug/g)</u>										
1.81	0.2		ITNA	73KIM 01		<	3.8		ITNA	84KUL 01
<u>Cs (ng/g)</u>										
590	50		ITNA	73KIM 01		10.39	0.22		ITNA	84KUL 01
860	30		ITNA	84KUL 01						
<u>Cu (ug/g)</u>										
						0.95	0.08		POL	73MAI 01
<u>Dy (ug/g)</u>										
<u>Eu (ug/g)</u>										
						0.54	0.05		ITNA	73KIM 01
						0.91	0.07		ITNA	84KUL 01
						1.1	0.6		ITNA	73SHE 01
<u>Fe (ug/g)</u>										
<u>Gd (ug/g)</u>										
						0.7	0.4	4	TCGS	85GLA 05
						0.8	0.2	4	TCGS	85GLA 05
<u>Hf (ug/g)</u>										
<u>La (ng/g)</u>										
						<	2000		ITNA	73SHE 01
						680	120		ITNA	84KUL 01
<u>Lu (ng/g)</u>										
						630	80		ITNA	84KUL 01
<u>Mn (ug/g)</u>										
						<	3.8		ITNA	84KUL 01
<u>Na (%)</u>										
						10.39	0.22		ITNA	84KUL 01
<u>Ni (ug/g)</u>										
						0.95	0.08		POL	73MAI 01

TABLE 614-2: INDIVIDUAL DATA FOR NBS SRM 614 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Pb (ug/g)</u>					<u>Th (ng/g)</u>				
2.22			FAA	84HEA 01	580	150		ITNA	73SHE 01
2.32	0.016	17	IDMS	73BAR 01	730	90		ITNA	84KUL 01
2.33	0.006	17	IDMS	73BAR 01	746	3	17	IDMS	73BAR 01
2.35	0.005		IDMS	86FIS 01	749	2	17	IDMS	73BAR 01
					750	10		ITNA	73KIM 01
<u>Rb (ug/g)</u>					<u>Ti (ug/g)</u>				
0.855	0.005		IDMS	73MOO 01	3.1	0.2		POL	73MAI 01
0.92	0.11		ITNA	84KUL 01					
<u>Sb (ug/g)</u>					<u>Tl (ng/g)</u>				
0.91	0.01		ITNA	84KUL 01	269	1		IDMS	73BAR 01
1.08	0.11		ITNA	73KIM 01	290	50		RTNA	82COH 01
1.1	0.1		ITNA	73SHE 01					
<u>Sc (ng/g)</u>					<u>U (ug/g)</u>				
640	20		ITNA	84KUL 01	0.74			NT	80VIR 01
680	230		ITNA	73SHE 01	0.817	0.009		IDMS	86FIS 01
840	10		ITNA	73KIM 01	0.823	0.0007	17	IDMS	73BAR 01
					0.823	0.002	D	IDMS	72CAR 01
					0.827	0.0025	17	IDMS	73BAR 01
<u>Sm (ug/g)</u>					0.827	0.007		NT	72CAR 01
0.68	0.1	4	TCGS	85GLA 05	0.828	0.05	D	IDMS	72CAR 01
0.69	0.1	4	TCGS	85GLA 05	0.87	0.14		ITNA	84KUL 01
0.89	0.06		ITNA	84KUL 01	<u>U-235 (atom %)</u>				
<u>Sr (ug/g)</u>					0.2792	0.0004		IDMS	72CAR 01
45.82	0.09		IDMS	73MOO 01	<u>V (ug/g)</u>				
<u>Ta (ug/g)</u>					<	13		ITNA	84KUL 01
0.96	0.05		ITNA	84KUL 01	<u>Yb (ug/g)</u>				
0.98	0.04		ITNA	73KIM 01	0.74	0.06		ITNA	84KUL 01
<u>Tb (ng/g)</u>					1.38	0.01		ITNA	73KIM 01
510	40		ITNA	84KUL 01					
620	60		ITNA	73KIM 01					

TABLE 616-1: COMPILED DATA FOR NBS SRM 616 TRACE ELEMENTS IN GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS	
		Mean ± SD		Mean ± SD	(n)			Mean	(n) Method
Au	ng/g	180 ± 10		---		---	---	---	
B	ng/g	200 ± 20		220	(2)	---	203 - 230	230	(1) TCGS
B	ng/g	---		---		---	---	203	(1) NT
B-10	atom %	---		19.827	(1)	---	---	19.827	(1) IDMS
Cu	ng/g	800 ± 90		---		---	---	---	
Fe	ug/g	11 ± 2		12	(2)	---	11 - 14	11	(1) POL
Fe	ug/g	---		---		---	---	14	(1) CPAA
Ga	ng/g	230 ± 20		---		---	---	---	
Gd	ng/g	---		< 10		---	---	< 10	TCGS
K	ug/g	29 ± 1		---		---	---	---	
La	ng/g	34 ± 7		---		---	---	---	
Pb	ug/g	1.85 ± 0.04		1.86	(2)	---	1.85 - 1.88	1.865	(2) IDMS
Rb	ng/g	100 ± 7		99.8	(1)	---	---	99.8	(1) IDMS
Sb	ng/g	78 ± 7		12	(1)	---	---	12	(1) NAA
Sc	ng/g	26 ± 12		20	(1)	---	---	20	(1) NAA
Sm	ng/g	---		< 10		---	---	< 10	TCGS
Sr	ug/g	41.72 ± 0.05		41.72	(1)	---	---	41.72	(1) IDMS
Th	ng/g	25.2 ± 0.7		23 ± 4	(3)	25.2	18 - 25.5	18	(1) NAA
Th	ng/g	---		---		---	---	25.35	(2) IDMS
Ti	ug/g	2.5 ± 0.7		2.5	(1)	---	---	2.5	(1) POL
Tl	ng/g	8.2 ± 0.5		8.2	(1)	---	---	8.2	(1) IDMS
U	ng/g	72.1 ± 1.3		72.3 ± 0.5	(3)	72.5	71.7 - 72.6	72.15	(2) IDMS
U	ng/g	---		---		---	---	72.5	(1) NT
U-235	atom %	0.6160		0.616	(1)	---	---	0.616	(1) IDMS

TABLE 616-2: INDIVIDUAL DATA FOR NBS SRM 616 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>B (ng/g)</u>										
203	57		NT	72CAR 01		20	4		ITNA	73SHE 01
230	130		TCGS	84GLA 01						
<u>B-10 (atom %)</u>										
19.827			IDMS	72CAR 01		<	0.01	4	TCGS	85GLA 05
<u>Fe (ug/g)</u>										
11	0.8		POL	73MAI 01		41.72	0.02		IDMS	73MOO 01
14	3		CPAA	74SWI 01						
<u>Gd (ug/g)</u>										
<	0.01	4	TCGS	85GLA 05		18	2		ITNA	73SHE 01
						25.2	0.3	17	IDMS	73BAR 01
						25.5	1.5	17	IDMS	73BAR 01
<u>Pb (ug/g)</u>										
1.85	0.018	17	IDMS	73BAR 01		2.5	0.2		POL	73MAI 01
1.88	0.014	17	IDMS	73BAR 01						
<u>Rb (ng/g)</u>										
99.8	0.6		IDMS	73MOO 01		8.2	0.1		IDMS	73BAR 01
<u>Sb (ng/g)</u>										
12	20		ITNA	73SHE 01		71.7	0.5	17	IDMS	73BAR 01
						71.7	1.4	D	IDMS	72CAR 01
						72.5	1.5		NT	72CAR 01
						72.6	0.4	17	IDMS	73BAR 01
						72.9	1.7	D	IDMS	72CAR 01
<u>U-235 (atom %)</u>										
						0.616	0.001		IDMS	72CAR 01

TABLE 633-1: COMPILED DATA FOR NBS SRM 633 PORTLAND CEMENT (RED CAP)  
(revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		RANGE	METHOD
		Mean	Mean	(n)		
Al	%	2.0	2.00	(2)	1.95 - 2.06	XRF
B	ug/g	< 100	---	---	---	---
Ca	%	45.34	46.11	(2)	46.02 - 46.20	XRF
F	ug/g	800	---	---	---	---
Fe	%	2.94	2.92	(1)	---	XRF
K	ug/g	1400	1410	(1)	---	XRF
LOI	%	0.75	---	---	---	---
Mg	ug/g	6300	5900	(1)	---	XRF
Mn	ug/g	280	---	---	---	---
Na	ug/g	4700	---	---	---	---
P	ug/g	1050	---	---	---	---
S	%	0.88	1.8	(2)	0.88 - 2.78	XRF
Si	%	10.22	10.22	(2)	10.2 - 10.25	XRF
Sr	ug/g	2600	---	---	---	---
Ti	ug/g	1440	---	---	---	---
Zn	ug/g	< 80	---	---	---	---

TABLE 633-2: INDIVIDUAL DATA FOR NBS SRM 633 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>					<u>Mg (ug/g)</u>				
1.95		XRF	74AND 03		5900			XRF	79FRE 01
2.06		XRF	79FRE 01						
<u>Ca (%)</u>					<u>S (%)</u>				
46.02		XRF	79FRE 01		0.88			XRF	79FRE 01
46.2		XRF	74AND 03		2.78			XRF	79FRE 01
<u>Fe (%)</u>					<u>Si (%)</u>				
2.92		XRF	79FRE 01		10.2			XRF	74AND 03
					10.25			XRF	79FRE 01
<u>K (ug/g)</u>									
1410		XRF	79FRE 01						

TABLE 634-1: COMPILED DATA FOR NBS SRM 634 PORTLAND CEMENT (GOLD CAP)  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		METHOD
			Mean	(n)	
Al	%	2.76	2.7	(1)	XRF
B	ug/g	< 100	---	---	---
Ca	%	44.74	45	(1)	XRF
F	ug/g	700	---	---	---
Fe	%	1.98	---	---	---
K	ug/g	3500	---	---	---
LOI	%	1.61	---	---	---
Mn	ug/g	1950	---	---	---
Na	ug/g	1100	---	---	---
P	ug/g	440	---	---	---
S	ug/g	8840	---	---	---
Si	%	9.68	9.57	(1)	XRF
Sr	ug/g	1000	---	---	---
Ti	ug/g	1800	---	---	---
Zn	ug/g	160	---	---	---

TABLE 634-2: INDIVIDUAL DATA FOR NBS SRM 634  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>				
2.7			XRF	74AND 03
<u>Ca (%)</u>				
45			XRF	74AND 03
<u>Si (%)</u>				
9.57			XRF	74AND 03

TABLE 635-1: COMPILED DATA FOR NBS SRM 635 PORTLAND CEMENT (BLUE CAP)  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	METHOD
			Mean	(n)		
Al	%	3.33	3.36	(2)	3.33 - 3.40	XRF
Ca	%	42.06	42.82	(2)	42.8 - 42.84	XRF
F	ug/g	300	---		---	---
Fe	%	1.82	1.85	(1)	---	XRF
K	ug/g	3700	3800	(1)	---	XRF
LOI	%	3.25	---		---	---
Mg	ug/g	---	7120	(1)	---	XRF
Mn	ug/g	630	---		---	---
Na	ug/g	500	---		---	---
P	ug/g	740	---		---	---
S	%	2.83	2.82	(1)	---	CB
Si	%	8.6	8.58	(2)	8.50 - 8.65	XRF
Sr	ug/g	1780	---		---	---
Ti	ug/g	1900	---		---	---
Zn	ug/g	80	---		---	---

TABLE 635-2: INDIVIDUAL DATA FOR NBS SRM 635 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
3.33		XRF	79FRE	01	3800		XRF	79FRE	01
3.4		XRF	74AND	03	<u>Mg (ug/g)</u>				
<u>Ca (%)</u>									
42.8		XRF	74AND	03	7120		XRF	79FRE	01
42.84		XRF	79FRE	01	<u>S (%)</u>				
<u>Fe (%)</u>									
1.85		XRF	79FRE	01	2.82		CB	84LEC	02
<u>Si (%)</u>									
					8.5		XRF	74AND	03
					8.65		XRF	79FRE	01

TABLE 636-1: COMPILED DATA FOR NBS SRM 636 PORTLAND CEMENT (YELLOW CAP)  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	METHOD
			Mean	(n)		
Al	%	1.6	1.72	(2)	1.68 - 1.75	XRF
Ca	%	45.43	45.46	(2)	45.43 - 45.5	XRF
F	ug/g	500	---		---	---
Fe	%	1.12	1.11	(1)	---	XRF
K	ug/g	4900	4650	(1)	---	XRF
LOI	%	1.16	---		---	---
Mg	%	---	2.31	(1)	---	XRF
Mn	ug/g	840	---		---	---
Na	ug/g	820	---		---	---
P	ug/g	390	---		---	---
S	%	0.924	0.94	(2)	0.925 - 0.964	CB, XRF
Si	%	10.84	10.72	(2)	10.70 - 10.75	XRF
Sr	ug/g	340	---		---	---
Ti	ug/g	1000	---		---	---
Zn	ug/g	240	---		---	---

TABLE 636-2: INDIVIDUAL DATA FOR NBS SRM 636 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
1.68		XRF	79FRE	01	4650			XRF	79FRE 01
1.75		XRF	74AND	03					
<u>Ca (%)</u>									
45.43		XRF	79FRE	01	2.31			XRF	79FRE 01
45.5		XRF	74AND	03					
<u>Fe (%)</u>									
1.11		XRF	79FRE	01	0.925			CB	84LEC 02
					0.964			XRF	79FRE 01
<u>Si (%)</u>									
					10.7			XRF	74AND 03
					10.75			XRF	79FRE 01

TABLE 637-1: COMPILED DATA FOR NBS SRM 637 PORTLAND CEMENT (PINK CAP)  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	METHOD
			Mean	(n)		
Al	%	1.74	1.76	(2)	1.75 - 1.76	XRF
Ca	%	47.22	47.3	(2)	47.09 - 47.5	XRF
F	ug/g	400	---		---	---
Fe	%	1.26	1.22	(1)	---	XRF
K	ug/g	2100	2080	(1)	---	XRF
LOI	%	1.68	---		---	---
Mg	ug/g	---	3900	(1)	---	XRF
Mn	ug/g	420	---		---	---
Na	ug/g	1100	---		---	---
P	ug/g	1090	---		---	---
S	%	0.952	0.964	(1)	---	XRF
Si	%	10.77	10.8	(2)	10.8 - 10.8	XRF
Sr	ug/g	760	---		---	---
Ti	ug/g	1260	---		---	---
Zn	ug/g	80	---		---	---

TABLE 637-2: INDIVIDUAL DATA FOR NBS SRM 637 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
1.75		XRF	74AND	03	3900			XRF	79FRE 01
1.76		XRF	79FRE	01					
<u>Ca (%)</u>									
47.09		XRF	79FRE	01	0.964			XRF	79FRE 01
47.5		XRF	74AND	03					
<u>Fe (%)</u>									
1.22		XRF	79FRE	01	10.8			XRF	79FRE 01
					10.8			XRF	74AND 03
<u>K (ug/g)</u>									
2080		XRF	79FRE	01					

TABLE 638-1: COMPILED DATA FOR NBS SRM 638 PORTLAND CEMENT (GREEN CAP)  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	METHOD
			Mean	(n)		
Al	%	2.35	2.41	(2)	2.40 - 2.42	XRF
B	ug/g	< 100	---		---	---
Ca	%	44.39	44.35	(2)	44.3 - 44.4	XRF
F	ug/g	400	---		---	---
Fe	%	2.48	2.49	(1)	---	XRF
K	ug/g	4900	4900	(1)	---	XRF
LOI	%	0.95	---		---	---
Mg	%	---	2.26	(1)	---	XRF
Mn	ug/g	350	---		---	---
Na	ug/g	960	---		---	---
P	ug/g	260	---		---	---
S	%	0.936	0.984	(1)	---	XRF
Si	%	10.03	9.99	(2)	9.98 - 10.0	XRF
Sr	ug/g	590	---		---	---
Ti	ug/g	1500	---		---	---
Zn	ug/g	720	---		---	---

TABLE 638-2: INDIVIDUAL DATA FOR NBS SRM 638 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>					<u>K (ug/g)</u>				
2.4			XRF	74AND 03	4900			XRF	79FRE 01
2.42			XRF	79FRE 01					
<u>Ca (%)</u>									
44.3			XRF	74AND 03	2.26			XRF	79FRE 01
44.4			XRF	79FRE 01					
<u>Fe (%)</u>					0.984			XRF	79FRE 01
2.49			XRF	79FRE 01					
<u>Si (%)</u>					9.98			XRF	79FRE 01
					10			XRF	74AND 03

TABLE 639-1: COMPILED DATA FOR NBS SRM 639 PORTLAND CEMENT (CLEAR CAP)  
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS		RANGE	METHOD
			Mean	(n)		
Al	%	2.26	2.3	(2)	2.3 - 2.3	XRF
Ca	%	47.02	47.14	(2)	47.07 - 47.2	XRF
F	ug/g	200	---		---	---
Fe	%	1.68	1.65	(1)	---	XRF
K	ug/g	500	500	(1)	---	XRF
LOI	%	1.0	---		---	---
Mg	ug/g	---	7120	(1)	---	XRF
Mn	ug/g	560	---		---	---
Na	ug/g	480	---		---	---
P	ug/g	350	---		---	---
S	%	0.992	0.98	(1)	---	XRF
Si	%	10.09	10.04	(2)	10.0 - 10.09	XRF
Sr	ug/g	1270	---		---	---
Ti	ug/g	1860	---		---	---
Zn	ug/g	80	---		---	---

TABLE 639-2: INDIVIDUAL DATA FOR NBS SRM 639 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
2.3		XRF	79FRE	01	500			XRF	79FRE 01
2.3		XRF	74AND	03					
<u>Ca (%)</u>									
47.07		XRF	79FRE	01	7120			XRF	79FRE 01
47.2		XRF	74AND	03					
<u>Fe (%)</u>									
1.65		XRF	79FRE	01	0.98			XRF	79FRE 01
<u>Si (%)</u>									
					10			XRF	74AND 03
					10.09			XRF	79FRE 01

TABLE 688-1: COMPILED DATA FOR NBS SRM 688 BASALT (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		NAA		ICPES		XRF		OTHER METHODS	
		Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean (n)	Mean (n)	Mean ± SD	n	Method	
Al	%	9.18 ± 0.05		9.17 ± 0.16	(7)	9.18		8.89 - 9.34		8.89 ± 0.35	(3)	9.04	(1)	9.34	(1)	9.22 ± 0.07	(3)
As	ug/g	---		2.50	(2)	---		2.33 - 2.68		2.50	(2)	---		---		---	
Au	ng/g	---		2.1	(2)	---		0.9 - 3.3		2.1	(2)	---		---		---	
B	ug/g	---		1.33 ± 0.15	(3)	1.12		1.12 - 1.5		---		---		1.22 ± 0.26	(4)	TCGS	
Ba	ug/g	200		197 ± 12	(5)	200		178 - 210		202 ± 7	(3)	178	(1)	200	(1)	---	
Be	ng/g	---		700	(2)	---		200 - 1200		---		200	(1)	---		1200	(1)
C-Inorg	ug/g	140		---		---		---		---		---		---		---	
Ca	%	8.7		8.47 ± 0.36	(7)	8.7		7.9 - 8.82		8.2	(2)	8.82	(1)	8.75	(1)	8.43 ± 0.46	(3)
Ce	ug/g	13.3		13 ± 2	(6)	12.87		10.1 - 16.7		13.4 ± 2.3	(5)	11.3	(1)	---		---	
Cl	ug/g	---		33.9 ± 2.6	(3)	35		31 - 35.8		---		---		35	(2)	TCGS	
Cl	ug/g	---		---		---		---		---		---		31	(1)	ISE	
Co	ug/g	49.7		49 ± 3	(7)	47.5		46.1 - 55.6		50 ± 4	(5)	47	(1)	50	(1)	---	
Cr	ug/g	332 ± 9		310 ± 50	(7)	328		230 - 377		337 ± 22	(5)	260	(1)	230	(1)	---	
Cs	ng/g	---		240 ± 150	(3)	210		110 - 400		240 ± 150	(3)	---		---		---	
Cu	ug/g	96		90	(1)	---		---		---		90	(1)	---		---	
Dy	ug/g	---		3.4 ± 0.2	(6)	3.4		3.1 - 3.8		3.3 ± 0.2	(3)	3.8	(1)	---		3.4	(2)
Er	ug/g	---		2.11 ± 0.18	(3)	2.2		1.9 - 2.22		---		1.9	(1)	---		2.21	(2)
Eu	ug/g	1.07		1.01 ± 0.02	(6)	1.01		0.99 - 1.04		1.01 ± 0.02	(5)	1.01	(1)	---		---	
F	ug/g	200		---		---		---		---		---		---		---	
Fe	%	7.23 ± 0.03		7.17 ± 0.11	(8)	7.19		7.03 - 7.34		7.17 ± 0.07	(3)	7.34	(1)	7.19	(1)	7.1 ± 0.12	(3)
Fe203	%	---		1.8	(1)	---		7.64 - 7.65		---		---		---		1.8	(1)
FeO	%	7.64 ± 0.03		7.645	(2)	---		7.64 - 7.65		---		---		7.65	(1)	CALC	
FeO	%	---		---		---		---		---		---		7.64	(1)	TITR	
Ga	ug/g	---		17.4	(2)	---		17 - 17.7		37.4	(2)	17	(1)	---		3.23 ± 0.38	(5)
Gd	ug/g	---		3.2 ± 0.4	(7)	3.3		2.5 - 3.7		2.5	(1)	3.6	(1)	---		4.00	(2)
H2O+	%	---		0.00	(2)	---		390 - 410		---		---		0.14	(1)	COUL	
H2O-	%	---		0.14	(1)	---		---		---		---		0.11	(1)	COUL	
Hf	ug/g	1.6		1.55 ± 0.08	(3)	1.58		1.46 - 1.62		1.55 ± 0.08	(3)	---		---		815	(2)
Ho	ng/g	---		810 ± 10	(3)	810		800 - 820		800	(1)	800	(1)	---		---	
Ir	ng/g	---		< 1.8	---	---		< 1.8		---		---		1590	(1)	1590	(1)
K	ug/g	1550 ± 70		1590 ± 70	(5)	1590		1530 - 1700		1620	(1)	1590	(1)	1590 ± 100	(3)	TCGS	

TABLE 688-1: COMPILED DATA FOR NBS SRM 688 BASALT (cont.)

ELEMENT	UNITS	NBS		CONSENSUS		RANGE		NAA		ICPES		XRF		OTHER METHODS		
		Mean ± SD	(n)	Mean ± SD	(n)	Median		Mean ± SD	(n)	Mean (n)		Mean (n)		Mean ± SD	(n)	Method
La	ug/g	---		5.3 ± 0.4 (7)	5.3	4.8 - 5.9		5.4 ± 0.5 (5)		5.3 (1)		5.0 (1)		---		
Li	ug/g	---		7.0 (1)	---	---		---		7.0 (1)		---		---		
Lu	ng/g	340		350 ± 40 (5)	340	330 - 420		360 ± 40 (4)		330 (1)		---		---		
Mg	%	5.1		5.26 ± 0.22 (7)	5.22	5 - 5.7		5.56 (2)		5.08 (1)		5.22 (1)		5.44 ± 0.23 (3)		TCGS
Mg	%	---		---	---	---		---		---		---		5.2 (1)		AA
Mn	ug/g	1290 ± 20		1210 ± 66 (8)	1220	1120 - 1290		1200 ± 80 (3)		1240 (1)		1220 (1)		1190 ± 60 (3)		TCGS
Na	%	1.6 ± 0.62		1.52 ± 0.08 (8)	1.57	1.39 - 1.63		1.50 ± 0.10 (4)		1.63 (1)		1.57 (1)		1.61 (2)		TCGS
Nb	ug/g	---		---	---	---		---		---		5.0 (1)		5.0 (1)		---
Nd	ug/g	---		9.1 ± 1.1 (3)	9.95	8.38 - 10.4		9.2 (2)		10.4 (1)		10.4 (1)		---		
Ni	ug/g	150		153 ± 30 (4)	143	123 - 185		154 (2)		143 (1)		180 (1)		---		
P	ug/g	580 ± 10		700 ± 200 (3)	620	560 - 930		---		560 (1)		620 (1)		930 (1)		COLOR
Pb	ug/g	3.3 ± 0.2	< 4	---	---	---		---		---		< 4		---		
Pr	ug/g	---		2.4 (1)	---	---		---		---		2.4 (1)		---		
Rb	ug/g	1.91 ± 0.01	2.6 (2)	---	2.18 - 3.0		2.18 (1)		---	---	3.0 (1)		---			
Sb	ng/g	---		300 ± 200 (3)	420	87 - 466		300 ± 200 (3)		---		---		---		
Sc	ug/g	38.1		38 ± 3 (7)	36.3	35.2 - 43.3		36.7 ± 1.5 (6)		43.3 (1)		---		---		
Se	ug/g	---	< 3	---	---	---		< 3		---		---		---		
Si	%	22.6 ± 0.05	22.52 ± 0.15 (4)	22.39	22.39 - 22.69	---	---	---		22.69 (1)		22.6 (1)		22.6 (1)		COLOR
Si	%	---	---	---	---	---		---		---		---		22.4 (2)		TCGS
Sm	ug/g	2.79	2.5 ± 0.2 (12)	2.4	2.09 - 2.9		2.4 ± 0.2 (6)		2.9 (1)		---		2.44 ± 0.12 (5)		TCGS	
Sr	ug/g	169.2 ± 0.7	172 ± 4 (4)	170.3	170 - 179		179 (1)		170 (1)		171 (2)		---			
Ta	ng/g	---		310 ± 70 (3)	310	246 - 380		310 ± 70 (3)		---		---		---		
Tb	ng/g	448	520 ± 40 (5)	520	462 - 580		520 ± 40 (5)		---		---		---		---	
Th	ng/g	330 ± 20	360 ± 80 (3)	320	310 - 460		360 ± 80 (3)		---		---		---		---	
Ti	ug/g	7000 ± 60	7090 ± 190 (6)	7000	6900 - 7390		7000 (1)		7390 (1)		7130 (1)		7000 ± 170 (3)		TCGS	
Tm	ng/g	---	290 ± 60 (3)	264	250 - 360		360 (1)		---		---		257 (2)		AA	
U	ng/g	370	310 ± 24 (4)	310	280 - 340		310 ± 25 (4)		---		---		---			
V	ug/g	250	242 ± 8 (4)	235	235 - 248		242 (2)		248 (1)		235 (1)		---			
Y	ug/g	---	17 ± 2 (3)	18	14.8 - 19.5		---		19.5 (1)		16.4 (2)		---			
Yb	ug/g	2.09	2.05 ± 0.20 (7)	2.06	1.77 - 2.36		2.04 ± 0.23 (5)		2.2 (1)		---		1.97 (1)		AA	
Zn	ug/g	58	84 ± 10 (4)	79	73 - 94		90 (1)		79 (1)		73 (1)		94 (1)		AA	
Zr	ug/g	---	60.6 ± 1.9 (5)	60.8	58.6 - 63		59.7 (2)		63 (1)		60.4 (2)		---			

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>									
8.54	0.39	ITNA	82GRA	01	10.1	3.9	ITNA	82GRA	01
8.89	0.11	ITNA	85GLA	01	11.3	0.4	ICPES	83CRO	01
9.04	0.05	ICPES	83CRO	01	12.87	0.2	ITNA	83BOY	01
9.18	0.09	TCGS	85AND	01	13.4	0.6	ITNA	85GLA	01
9.18	0.09	TCGS	83AND	01	13.7	0.5	RTNA	85GAU	04
9.24	0.1	IENA	85GLA	02	16.7	1	RTNA	84GLA	11
9.3	0.2	TCGS	82GRA	01	25	25	WXRF	85GLA	01
9.34	0.08	WXRF	85GLA	01					
<u>As (ug/g)</u>									
2.33	0.05	ITNA	83BOY	01	31	3	ISE	86ELS	01
2.68	0.54	ITNA	82GRA	01	35	1	TCGS	85AND	01
					35.8	0.8	TCGS	83AND	01
<u>Au (ng/g)</u>									
0.9	0.4	ITNA	82GRA	01	46.1	0.5	ITNA	85GLA	01
3.3	0.1	ITNA	83BOY	01	46.6	0.9	ITNA	84GLA	11
					47	1	ICPES	83CRO	01
<u>B (ug/g)</u>									
<	3	OES	83MIL	01	47.5	1.5	ITNA	82GRA	01
0.88	0.14	TCGS	82GRA	01	50	3	WXRF	85GLA	01
1.2	0.2	TCGS	84GLA	01	51.9	0.5	ITNA	83BOY	01
1.3	0.2	TCGS	83AND	01	55.6	1.2	ITNA	84GLA	02
1.5	0.2	TCGS	85AND	01					
<u>Ba (ug/g)</u>									
178	2	ICPES	83CRO	01	230	25	WXRF	85GLA	01
197	33	ITNA	82GRA	01	260	20	ICPES	83CRO	01
200	30	ITNA	85GLA	01	322	4	ITNA	86GAU	01
200	60	WXRF	85GLA	01	328	15	ITNA	82GRA	01
210	30	ITNA	84GLA	02	330	4	ITNA	85GLA	01
					330	10	ITNA	84GLA	02
					377	4	ITNA	83BOY	01
<u>Be (ng/g)</u>									
200	50	ICPES	83CRO	01	<	400	ITNA	84GLA	11
1200		OES	83MIL	01	<	600	ITNA	83BOY	01
					110	60	ITNA	85GLA	01
<u>Ca (%)</u>									
7.9	0.2	TCGS	82GRA	01	210	110	ITNA	84GLA	02
8.2	0.6	ITNA	82GRA	01	400		ITNA	86GAU	01
8.2	0.6	ITNA	85GLA	01					
8.7	0.09	TCGS	83AND	01					
8.7	0.09	TCGS	85AND	01					
8.75	0.02	WXRF	85GLA	01					
8.82	0.02	ICPES	83CRO	01					
<u>Ce (ug/g)</u>									
<u>Cl (ug/g)</u>									
<u>Co (ug/g)</u>									
<u>Cr (ug/g)</u>									
<u>Cs (ng/g)</u>									
<u>Cu (ug/g)</u>									
<u>ICPES</u>									

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>Dy (ug/g)</u>						<u>Gd (ug/g)</u>					
3.1	0.3	RTNA	85GAU	04		2.5		ITNA	82GRA	01	
3.2	0.8	ITNA	83BOY	01		2.82	0.08	TCGS	82GRA	01	
3.4	0.14	FAA	84GLA	11		2.88	0.1	TCGS	83AND	01	
3.4	0.5	FAA	85GAU	04		3.3	0.5	4	TCGS	85GLA	05
3.53	0.17	RTNA	84GLA	11		3.46	0.1	TCGS	85AND	01	
3.8	0.2	ICPES	83CRO	01		3.6	0.3	ICPES	83CRO	01	
						3.7	0.4	4	TCGS	85GLA	05
<u>Er (ug/g)</u>						<u>H (ug/g)</u>					
1.9	0.1	ICPES	83CRO	01		390	10	TCGS	83AND	01	
2.2	0.4	FAA	85GAU	04		410	10	TCGS	85AND	01	
2.22	0.08	FAA	84GLA	11							
<u>Eu (ug/g)</u>						<u>H2O+ (%)</u>					
0.919	0.048	ITNA	82GRA	01		0.14	0.01	COUL	85GLA	01	
0.99	0.06	ITNA	85GLA	01							
1.001	0.01	ITNA	83BOY	01		<u>H2O- (%)</u>					
1.01	0.02	ICPES	83CRO	01		0.11	0.01	COUL	85GLA	01	
1.01	0.04	RTNA	85GAU	04							
1.01	0.05	ITNA	84GLA	02		<u>Hf (ug/g)</u>					
1.04	0.04	RTNA	84GLA	11		1.46	0.13	ITNA	84GLA	02	
						1.58	0.14	ITNA	82GRA	01	
<u>Fe (%)</u>						1.62	0.13	ITNA	85GLA	01	
7.03	0.1	TCGS	85AND	01							
7.03	0.1	TCGS	83AND	01		<u>Ho (ng/g)</u>					
7.1	0.06	ITNA	84GLA	02		800	50	ICPES	83CRO	01	
7.19	0.02	WXRF	85GLA	01		810	60	FAA	85GAU	04	
7.19	0.17	ITNA	85GLA	01		820	20	FAA	84GLA	11	
7.23	0.17	TCGS	82GRA	01							
7.23	0.19	ITNA	82GRA	01		<u>Ir (ng/g)</u>					
7.34	0.03	ICPES	83CRO	01		<	1.8	ITNA	83BOY	01	
7.82	0.08	ITNA	83BOY	01							
<u>FE203 (%)</u>						<u>K (ug/g)</u>					
1.8	0.17	CALC	85GLA	01		1530	60	TCGS	83AND	01	
						1530	60	TCGS	85AND	01	
<u>FEO (%)</u>						1590	75	WXRF	85GLA	01	
7.64		TITR	84GOL	01		1620	30	ICPES	83CRO	01	
7.65	0.15	COLOR	85GLA	01		1700	100	TCGS	82GRA	01	
<u>Ga (ug/g)</u>											
17	7	ICPES	83CRO	01							
17.7	1.1	ITNA	83BOY	01							
57	10	ITNA	82GRA	01							

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>La (ug/g)</u>					<u>Na (%)</u>				
4.8	0.4	RTNA	84GLA	11	1.05	0.07	TCGS	82GRA	01
4.96	0.05	ITNA	83BOY	01	1.39	0.12	ITNA	82GRA	01
5	2.5	WXRF	85GLA	01	1.48	0.02	ITNA	85GAU	04
5.3	0.1	ICPES	83CRO	01	1.51	0.08	ITNA	85GLA	01
5.3	0.3	RTNA	85GAU	04	1.57	0.02	WXRF	85GLA	01
5.9	0.2	ITNA	84GLA	02	1.61	0.01	ITNA	84GLA	02
5.9	0.6	ITNA	85GLA	01	1.61	0.06	TCGS	83AND	01
7.54	0.93	ITNA	82GRA	01	1.61	0.06	TCGS	85AND	01
					1.63	0.05	ICPES	83CRO	01
<u>Li (ug/g)</u>					<u>Nb (ug/g)</u>				
7	1	ICPES	83CRO	01	5	1	WXRF	84KYL	01
<u>Lu (ng/g)</u>					5	1	ICPES	83CRO	01
330	3	ITNA	83BOY	01	<u>Nd (ug/g)</u>				
330	10	ICPES	83CRO	01	<	10	ITNA	85GLA	01
340	40	ITNA	84GLA	11	8.38	0.16	ITNA	83BOY	01
342	57	ITNA	82GRA	01	9.95	1.08	ITNA	82GRA	01
420	60	RTNA	84GLA	11	10.4	0.5	ICPES	83CRO	01
					15	1	RTNA	84GLA	11
<u>Mg (%)</u>					<u>Ni (ug/g)</u>				
3.9	0.8	ITNA	82GRA	01	123	29	ITNA	82GRA	01
5	0.12	ITNA	85GLA	01	143	2	ICPES	83CRO	01
5.08	0.02	ICPES	83CRO	01	180	50	WXRF	85GLA	01
5.2		AA	85GAU	04	186	13	ITNA	83BOY	01
5.22	0.02	WXRF	85GLA	01					
5.3	0.2	TCGS	83AND	01					
5.31	0.18	TCGS	85AND	01					
5.7	0.4	TCGS	82GRA	01	<u>P (ug/g)</u>				
6.12	0.12	IENA	85GLA	02	560	20	ICPES	83CRO	01
<u>Mn (ug/g)</u>					620	20	WXRF	85GLA	01
					930		COLOR	85GAU	04
1120	60	TCGS	82GRA	01	<u>Pb (ug/g)</u>				
1140	30	ITNA	85GLA	01	<	4	ICPES	83CRO	01
1180	70	ITNA	82GRA	01	<u>Pr (ug/g)</u>				
1220	40	WXRF	85GLA	01	2.4	0.6	ICPES	83CRO	01
1230	40	TCGS	83AND	01					
1230	40	TCGS	85AND	01					
1240	20	ICPES	83CRO	01					
1290	60	ITNA	84GLA	02	<u>Rb (ug/g)</u>				
					<	10	ITNA	85GLA	01
					2.18	0.26	ITNA	83BOY	01
					3	3	WXRF	85GLA	01
					32.7	1	WXRF	84KYL	01

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference						
<u><b>Sb (ng/g)</b></u>															
87	< 200	ITNA	85GLA	01	246	58	ITNA	82GRA	01						
420	3	ITNA	83BOY	01	310	60	ITNA	85GLA	01						
466	207	ITNA	84GLA	02	380	70	ITNA	84GLA	02						
<u><b>Ta (ng/g)</b></u>															
35.2	0.4	ITNA	85GLA	01	462	25	ITNA	82GRA	01						
35.5	0.1	ITNA	84GLA	11	512	10	ITNA	83BOY	01						
36.1	0.9	ITNA	82GRA	01	520	60	ITNA	84GLA	02						
36.3	0.5	ITNA	84GLA	02	535	24	RTNA	84GLA	11						
38.3	0.4	ITNA	83BOY	01	580	50	ITNA	85GLA	01						
38.9	0.2	ITNA	86GAU	01	<u><b>Tb (ng/g)</b></u>										
43.3	0.5	ICPES	83CRO	01	310	60	ITNA	85GLA	01						
<u><b>Se (ug/g)</b></u>															
22.39	0.08	TCGS	85AND	01	320	ITNA	85GAU	04							
22.39	0.08	TCGS	83AND	01	460	130	ITNA	84GLA	02						
22.6		COLOR	85GAU	04	<u><b>Th (ng/g)</b></u>										
22.69	0.15	WXRF	85GLA	01	310	ITNA	85GLA	01							
24.6	0.6	TCGS	82GRA	01	320	ITNA	85GAU	04							
<u><b>Si (%)</b></u>															
2.09	0.22	ITNA	82GRA	01	460	130	ITNA	84GLA	02						
2.29	0.03	ITNA	83BOY	01	6900	100	TCGS	83AND	01						
2.3	0.3	ITNA	85GLA	01	6910	100	TCGS	85AND	01						
2.31	0.08	TCGS	82GRA	01	7000	700	ITNA	82GRA	01						
2.35	0.02	TCGS	83AND	01	7130	90	WXRF	85GLA	01						
2.4	0.2	4	TCGS	85GLA	05	7200	200	TCGS	82GRA	01					
2.46	0.14	RTNA	85GAU	04	7390	90	ICPES	83CRO	01						
2.5	0.2	4	TCGS	85GLA	05	<u><b>Ti (ug/g)</b></u>									
2.54	0.07	ITNA	84GLA	02	6900	100	TCGS	83AND	01						
2.62	0.02	TCGS	85AND	01	6910	100	TCGS	85AND	01						
2.84	0.18	RTNA	84GLA	11	7000	700	ITNA	82GRA	01						
2.9	0.7	ICPES	83CRO	01	7130	90	ITNA	83BOY	01						
<u><b>Sm (ug/g)</b></u>															
2.4	0.2	4	TCGS	85GLA	05	250	60	FAA	85GAU	04					
2.64						264	15	FAA	84GLA	11					
3.60						360	36	ITNA	83BOY	01					
<u><b>Tm (ng/g)</b></u>															
2.35						<u><b>U (ng/g)</b></u>									
2.48						280		DNA	84GLA	02					
3.10						310		DNA	86GAU	01					
3.10						310	40	DNA	85GLA	01					
3.40						340	80	ITNA	82GRA	01					
<u><b>V (ug/g)</b></u>															
2.35						235	25	ITNA	82GRA	01					
2.35						235	40	WXRF	85GLA	01					
2.48						248	1	ICPES	83CRO	01					
2.48						248	5	RTNA	84GLA	11					
<u><b>Sr (ug/g)</b></u>															
170	10	ICPES	83CRO	01											
170.3	1	WXRF	84KYL	01											
171	10	WXRF	85GLA	01											
179	14	IENA	84GLA	02											

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Y (ug/g)</u>					
14.8	1		WXRF	84KYL 01	
18	4		WXRF	85GLA 01	
19.5	0.1		ICPES	83CRO 01	
<u>Yb (ug/g)</u>					
1.77	0.09		ITNA	84GLA 11	
1.86	0.27		ITNA	82GRA 01	
1.97	0.02		FAA	84GLA 11	
2.06	0.05		ITNA	85GLA 01	
2.14	0.02		ITNA	83BOY 01	
2.2	0.03		ICPES	83CRO 01	
2.36	0.12		RTNA	84GLA 11	
<u>Zn (ug/g)</u>					
73	5		WXRF	85GLA 01	
79	1		ICPES	83CRO 01	
90	1.8		ITNA	83BOY 01	
94		AA		85GAU 04	
<u>Zr (ug/g)</u>					
58.6	8.7		ITNA	82GRA 01	
58.8	1		WXRF	84KYL 01	
60.8	0.3		ITNA	83BOY 01	
62	2		WXRF	85GLA 01	
63	4		ICPES	83CRO 01	

TABLE 694-1: COMPILED DATA FOR NBS SRM 694 WESTERN PHOSPHATE ROCK  
 (revised 3/1/86)

ELEMENT	UNITS	NBS
		Mean $\pm$ SD
Al	%	0.95 $\pm$ 0.05
Ca	%	31.2 $\pm$ 0.3
Cd	ug/g	131 $\pm$ 26
Cr	ug/g	6980
F	%	3.2 $\pm$ 0.1
Fe	ug/g	5520 $\pm$ 420
K	ug/g	4230 $\pm$ 170
Mg	ug/g	1990 $\pm$ 120
Mn	ug/g	90 $\pm$ 9
Na	ug/g	6380 $\pm$ 300
P	%	13.17 $\pm$ 0.04
Si	%	5.23 $\pm$ 0.19
Ti	ug/g	660
U	ug/g	141.4 $\pm$ 0.6
V	ug/g	1740 $\pm$ 390
Zn	ug/g	1520

TABLE 697-1: COMPILED DATA FOR NBS SRM 697 BAUXITE (DOMINICIAN)  
 (revised 3/1/86)

ELEMENT	UNITS	NBS
		Mean $\pm$ SD
Al	%	24.2 $\pm$ 0.1
Ba	ug/g	130
Ca	ug/g	5100 $\pm$ 210
Ce	ug/g	690
Co	ug/g	13
Cr	ug/g	684 $\pm$ 34
Fe	%	14.0 $\pm$ 0.2
Hf	ug/g	14
K	ug/g	510 $\pm$ 60
LOI	%	22.1
Mg	ug/g	1100 $\pm$ 120
Mn	ug/g	3200 $\pm$ 230
Na	ug/g	270
P	ug/g	4200 $\pm$ 260
S	ug/g	520 $\pm$ 120
Sc	ug/g	58
Si	%	3.18 $\pm$ 0.03
Ti	%	1.51 $\pm$ 0.03
V	ug/g	350 $\pm$ 30
Zn	ug/g	300 $\pm$ 25
Zr	ug/g	480 $\pm$ 50

TABLE 696-1: COMPILED DATA FOR NBS SRM 696 BAUXITE (SURINAM)  
(revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		RANGE	METHOD
		Mean $\pm$ SD	Mean	(n)		
Al	%	28.8 $\pm$ 0.2	28.43	(2)	28.30 - 28.57	ICPES
Ba	ug/g	36	31	(2)	30.46 - 32.26	ICPES
Ca	ug/g	130 $\pm$ 15	122	(2)	115 - 129	ICPES
Ce	ug/g	41	38	(1)	---	---
Co	ug/g	0.9	---		---	---
Cr	ug/g	320 $\pm$ 30	318	(2)	314 - 321	ICPES
Fe	%	6.08 $\pm$ 0.07	6.04	(2)	6.01 - 6.07	ICPES
Hf	ug/g	32	29	(2)	28 - 30	ICPES
K	ug/g	75 $\pm$ 25	---		---	---
LOI	%	29.9 $\pm$ 0.2	---		---	---
Mg	ug/g	72 $\pm$ 18	63.3	(2)	60.30 - 66.33	ICPES
Mn	ug/g	31 $\pm$ 8	28.2	(2)	27.09 - 29.41	ICPES
Na	ug/g	52	---		---	---
P	ug/g	220 $\pm$ 30	209	(2)	192 - 227	ICPES
S	ug/g	840 $\pm$ 120	---		---	---
Sc	ug/g	8	8	(2)	7 - 9	ICPES
Si	%	1.77 $\pm$ 0.05	1.76	(2)	1.76 - 1.76	ICPES
Ti	%	1.58 $\pm$ 0.03	1.56	(2)	1.55 - 1.58	ICPES
V	ug/g	400 $\pm$ 30	398	(2)	398 - 398	ICPES
Zn	ug/g	11 $\pm$ 6	12.8	(1)	---	ICPES
Zr	ug/g	1040 $\pm$ 150	1003	(2)	992 - 1014	ICPES

TABLE 696-2: INDIVIDUAL DATA FOR NBS SRM 696 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Al (%)</u>										
28.3015	0.4232	11	ICPES	83BAR 02		27.09	1.548	11	ICPES	83BAR 02
28.566	0.4232	11	ICPES	83BAR 02		29.412	15.48	11	ICPES	83BAR 02
<u>Ba (ug/g)</u>										
30.464	1.792	11	ICPES	83BAR 02		191.84	4.36	11	ICPES	83BAR 02
32.256	2.688	11	ICPES	83BAR 02		226.72	4.36	11	ICPES	83BAR 02
<u>Ca (ug/g)</u>										
115	1.4	11	ICPES	83BAR 02		7	1	11	ICPES	83BAR 02
129	2	11	ICPES	83BAR 02		9	1	11	ICPES	83BAR 02
<u>Ce (ug/g)</u>										
38	2	11	ICPES	83BAR 02		1.7559	0.0234	11	ICPES	83BAR 02
						1.7559	0.028	11	ICPES	83BAR 02
<u>Cr (ug/g)</u>										
314.64	6.84	11	ICPES	83BAR 02		1.5514	0.024	11	ICPES	83BAR 02
321.48	6.84	11	ICPES	83BAR 02		1.5754	0.03	11	ICPES	83BAR 02
<u>Fe (%)</u>										
6.0114	0.0699	11	ICPES	83BAR 02		397.6	5.6	11	ICPES	83BAR 02
6.0743	0.0629	11	ICPES	83BAR 02		397.6	5.6	11	ICPES	83BAR 02
<u>Hf (ug/g)</u>										
28	2	11	ICPES	83BAR 02		12.848	0.803	11	ICPES	83BAR 02
30	2	11	ICPES	83BAR 02						
<u>Mg (ug/g)</u>										
60.3	6.03	11	ICPES	83BAR 02		992	15	11	ICPES	83BAR 02
66.33	1.206	11	ICPES	83BAR 02		1013.8	22.2	11	ICPES	83BAR 02
<u>Zr (ug/g)</u>										

TABLE 698-1: COMPILED DATA FOR NBS SRM 698 BAUXITE (JAMAICAN)  
(revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		RANGE	METHOD
		Mean $\pm$ SD	Mean	(n)		
Al	%	25.5 $\pm$ 0.2	25.10	(2)	25.02 - 25.18	ICPES
Ba	ug/g	72	68	(2)	68 - 68	ICPES
Ca	ug/g	4400 $\pm$ 140	4400	(2)	4390 - 4404	ICPES
Ce	ug/g	300	300	(2)	291 - 310	ICPES
Co	ug/g	45	45	(2)	43 - 47	ICPES
Cr	ug/g	550 $\pm$ 40	527	(2)	527 - 527	ICPES
Fe	%	13.7 $\pm$ 0.1	13.6	(2)	13.35 - 13.91	ICPES
Hf	ug/g	15	13	(1)	---	---
K	ug/g	83 $\pm$ 17	---		---	---
LOI	%	27.3	---		---	---
Mg	ug/g	350 $\pm$ 50	332	(2)	332 - 332	ICPES
Mn	ug/g	2900 $\pm$ 230	2875	(2)	2872 - 2879	ICPES
Na	ug/g	110	---		---	---
P	ug/g	1600 $\pm$ 40	1585	(2)	1570 - 1600	ICPES
S	ug/g	880 $\pm$ 120	---		---	---
Sc	ug/g	51	48	(2)	46 - 50	ICPES
Si	ug/g	3200 $\pm$ 140	3180	(2)	3129 - 3232	ICPES
Ti	%	1.42 $\pm$ 0.04	1.40	(2)	1.39 - 1.40	ICPES
V	ug/g	360 $\pm$ 10	347	(2)	342 - 353	ICPES
Zn	ug/g	230 $\pm$ 20	221	(2)	217 - 225	ICPES
Zr	ug/g	450 $\pm$ 70	429.6	(2)	429.2 - 429.9	ICPES

TABLE 698-2: INDIVIDUAL DATA FOR NBS SRM 698 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>Al (%)</u>											
25.0217	0.3703	11	ICPES	83BAR	02	2871.54	46.44	11	ICPES	83BAR	02
25.1804	0.3703	11	ICPES	83BAR	02	2879.28	38.7	11	ICPES	83BAR	02
<u>Ba (ug/g)</u>											
68.096	2.688	11	ICPES	83BAR	02	1569.6	21.8	11	ICPES	83BAR	02
68.096	3.584	11	ICPES	83BAR	02	1600.12	26.16	11	ICPES	83BAR	02
<u>Ca (ug/g)</u>											
4390.1	57.2	11	ICPES	83BAR	02	46	3	11	ICPES	83BAR	02
4404.4	64.35	11	ICPES	83BAR	02	50	2	11	ICPES	83BAR	02
<u>Ce (ug/g)</u>											
291	5	11	ICPES	83BAR	02	3128.9	46.7	11	ICPES	83BAR	02
310	10	11	ICPES	83BAR	02	3231.64	42.03	11	ICPES	83BAR	02
<u>Co (ug/g)</u>											
43	2	11	ICPES	83BAR	02	1.3897	0.024	11	ICPES	83BAR	02
47	3	11	ICPES	83BAR	02	1.4017	0.018	11	ICPES	83BAR	02
<u>Cr (ug/g)</u>											
526.68	6.84	11	ICPES	83BAR	02	341.6	5.6	11	ICPES	83BAR	02
526.68	6.84	11	ICPES	83BAR	02	352.8	5.6	11	ICPES	83BAR	02
<u>Fe (%)</u>											
13.3509	0.2097	11	ICPES	83BAR	02	216.81	8.03	11	ICPES	83BAR	02
13.9101	0.2796	11	ICPES	83BAR	02	224.84	4.015	11	ICPES	83BAR	02
<u>Hf (ug/g)</u>											
13	1	11	ICPES	83BAR	02	429.2	7.4	11	ICPES	83BAR	02
						429.94	5.18	11	ICPES	83BAR	02
<u>Mg (ug/g)</u>											
331.65	6.03	11	ICPES	83BAR	02						
331.65	30.15	11	ICPES	83BAR	02						
<u>Mn (ug/g)</u>											
<u>P (ug/g)</u>											
<u>Sc (ug/g)</u>											
<u>Si (ug/g)</u>											
<u>Ti (%)</u>											
<u>V (ug/g)</u>											
<u>Zn (ug/g)</u>											
<u>Zr (ug/g)</u>											

TABLE 1083-1: COMPILED DATA FOR NBS SRM 1083 WEAR METALS IN LUBRICATING OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean
Ag	ng/g	< 50
Al	ug/g	< 0.5
Cd	ng/g	< 40
Cl	ug/g	1.7
Co	ng/g	< 10
Cr	ng/g	< 20
Cu	ng/g	< 500
Fe	ug/g	< 1
Mg	ng/g	< 100
Mn	ng/g	< 5
Mo	ng/g	< 10
Na	ng/g	< 60
Ni	ng/g	< 400
Pb	ng/g	< 40
S	ug/g	980
Si	ug/g	< 1
Sn	ng/g	< 400
Ti	ug/g	< 5
V	ng/g	< 300
Zn	ng/g	< 80

TABLE 1084-1: COMPILED DATA FOR NBS SRM 1084 WEAR METALS IN LUBRICATING OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	METHOD
		Mean $\pm$ SD	Mean $\pm$ SD (n)			
Ag	ug/g	101	95.7 $\pm$ 1.5 (3)	96	94 - 97	ICPES
Al	ug/g	98 $\pm$ 2	98 $\pm$ 6 (3)	100	92 - 103	ICPES
Cd	ng/g	< 40	---	---	---	---
Cl	ug/g	1.7	---	---	---	---
Co	ng/g	< 10	---	---	---	---
Cr	ug/g	100 $\pm$ 3	101 $\pm$ 1 (3)	101	100 - 102	ICPES
Cu	ug/g	98 $\pm$ 4	99 $\pm$ 2 (3)	99	96 - 101	ICPES
Fe	ug/g	100 $\pm$ 3	98.7 $\pm$ 0.6 (3)	99	98 - 99	ICPES
Mg	ug/g	98 $\pm$ 4	95 $\pm$ 3 (3)	96	92 - 97	ICPES
Mn	ng/g	< 5	---	---	---	---
Mo	ug/g	97 $\pm$ 5	97 $\pm$ 2 (3)	97	94 - 99	ICPES
Na	ng/g	< 60	---	---	---	---
Ni	ug/g	101 $\pm$ 4	97 $\pm$ 4 (3)	98	93 - 101	ICPES
Pb	ug/g	101	98 $\pm$ 2 (3)	97	96 - 100	ICPES
S	ug/g	2237	---	---	---	---
Si	ug/g	102	---	---	---	---
Sn	ug/g	102 $\pm$ 6	---	---	---	---
Ti	ug/g	99 $\pm$ 5	100 $\pm$ 2 (3)	101	98 - 102	ICPES
V	ng/g	< 300	---	---	---	---
Zn	ng/g	< 80	---	---	---	---

TABLE 1084-2: INDIVIDUAL DATA FOR NBS SRM 1084 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ug/g)</u>										
94	2	11	ICPES	84BAR 03		92	2	11	ICPES	84BAR 03
96	5	11	ICPES	84BAR 03		96	2	11	ICPES	84BAR 03
97	1	11	ICPES	84BAR 03		97	2	11	ICPES	84BAR 03
<u>Al (ug/g)</u>										
92	5	11	ICPES	84BAR 03		94	3	11	ICPES	84BAR 03
100	3	11	ICPES	84BAR 03		97	3	11	ICPES	84BAR 03
103	7	11	ICPES	84BAR 03		99	4	11	ICPES	84BAR 03
<u>Cr (ug/g)</u>										
100	1	11	ICPES	84BAR 03		93	3	11	ICPES	84BAR 03
101	3	11	ICPES	84BAR 03		98	4	11	ICPES	84BAR 03
102	5	11	ICPES	84BAR 03		101	5	11	ICPES	84BAR 03
<u>Cu (ug/g)</u>										
96	3	11	ICPES	84BAR 03		96	4	11	ICPES	84BAR 03
99	4	11	ICPES	84BAR 03		97	2	11	ICPES	84BAR 03
101	3	11	ICPES	84BAR 03		100	3	11	ICPES	84BAR 03
<u>Fe (ug/g)</u>										
98	4	11	ICPES	84BAR 03		98	2	11	ICPES	84BAR 03
99	2	11	ICPES	84BAR 03		101	7	11	ICPES	84BAR 03
99	2	11	ICPES	84BAR 03		102	2	11	ICPES	84BAR 03
<u>Mg (ug/g)</u>										
<u>Mo (ug/g)</u>										
<u>Ni (ug/g)</u>										
<u>Pb (ug/g)</u>										
<u>Ti (ug/g)</u>										

TABLE 1085-1: COMPILED DATA FOR NBS SRM 1085 WEAR METALS IN LUBRICATING OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD
		Mean ± SD	Mean	± SD (n)			
Ag	ug/g	291	300	± 6 (3)	303	293 - 305	ICPES
Al	ug/g	296 ± 4	303	± 6 (3)	303	297 - 309	ICPES
Cd	ng/g	< 40	---	---	---	---	---
Cl	ug/g	1.7	---	---	---	---	---
Co	ng/g	< 10	---	---	---	---	---
Cr	ug/g	298 ± 5	302	± 8 (3)	304	294 - 309	ICPES
Cu	ug/g	295 ± 10	302	± 2 (3)	302	299 - 304	ICPES
Fe	ug/g	300 ± 4	303.3	± 1.5 (3)	303	302 - 305	ICPES
Mg	ug/g	297 ± 3	300	± 5 (3)	302	295 - 304	ICPES
Mn	ng/g	< 5	---	---	---	---	---
Mo	ug/g	292 ± 11	293	± 4 (3)	292	290 - 298	ICPES
Na	ng/g	< 60	---	---	---	---	---
Ni	ug/g	303 ± 7	300	± 10 (3)	303	288 - 308	ICPES
Pb	ug/g	305	300.3	± 1.2 (3)	301	299 - 301	ICPES
S	ug/g	4806	---	---	---	---	---
Si	ug/g	308	---	---	---	---	---
Sn	ug/g	296 ± 12	---	---	---	---	---
Ti	ug/g	300 ± 4	---	---	---	---	---
V	ng/g	< 300	---	---	---	---	---
Zn	ng/g	< 80	---	---	---	---	---

TABLE 1085-2: INDIVIDUAL DATA FOR NBS SRM 1085 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ug/g)</u>										
293	5	11	ICPES	84BAR 03		302	5	11	ICPES	84BAR 03
303	7	11	ICPES	84BAR 03		303	5	11	ICPES	84BAR 03
305	5	11	ICPES	84BAR 03		305	10	11	ICPES	84BAR 03
<u>Al (ug/g)</u>										
297	7	11	ICPES	84BAR 03		295	8	11	ICPES	84BAR 03
303	7	11	ICPES	84BAR 03		302	10	11	ICPES	84BAR 03
309	8	11	ICPES	84BAR 03		304	8	11	ICPES	84BAR 03
<u>Cr (ug/g)</u>										
294	4	11	ICPES	84BAR 03		290	10	11	ICPES	84BAR 03
304	3	11	ICPES	84BAR 03		292	4	11	ICPES	84BAR 03
309	6	11	ICPES	84BAR 03		298	7	11	ICPES	84BAR 03
<u>Cu (ug/g)</u>										
299	5	11	ICPES	84BAR 03		288	7	11	ICPES	84BAR 03
302	6	11	ICPES	84BAR 03		303	5	11	ICPES	84BAR 03
304	7	11	ICPES	84BAR 03		308	5	11	ICPES	84BAR 03
<u>Pb (ug/g)</u>										
						299	10	11	ICPES	84BAR 03
						301	6	11	ICPES	84BAR 03
						301	6	11	ICPES	84BAR 03

TABLE 1549-1: COMPILED COMPOSITION DATA FOR NBS SRM 1549 MILK POWDER (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		METHOD
		Mean ± SD		Mean	(n)	
Ag	ng/g	< 0.3		< 0.3		---
Al	ug/g	2		< 3		---
As	ng/g	1.9		1.77 (1)		NAA
Br	ug/g	12		11.85 (2)	11.6 - 12.1	NAA
Ca	%	1.3 ± 0.05		1.263 (2)	1.2 - 1.326	NAA
Cd	ng/g	0.5 ± 0.2		0.47 (1)	---	NAA
Cl	%	1.09 ± 0.02		1.085 (1)	---	NAA
Co	ng/g	4.1		4.12 (1)	---	NAA
Cr	ng/g	2.6 ± 0.7		2.5 (1)	---	NAA
Cs	ng/g	---		17.6 (1)	---	NAA
Cu	ng/g	700 ± 100		628 (2)	606 - 650	NAA
F	ng/g	200		---	---	---
Fe	ug/g	2.1		2.03 (2)	1.76 - 2.3	NAA
H2O	%	---		3.6 (1)	---	---
Hg	ng/g	0.3 ± 0.2		0.16 (1)	---	NAA
I	ug/g	3.38 ± 0.02		3.2 (1)	---	NAA
K	%	1.69 ± 0.03		1.735 (2)	1.69 - 1.78	NAA
Mg	ug/g	1200 ± 30		1190 (1)	---	NAA
Mn	ng/g	260 ± 60		281.5 (2)	233 - 330	NAA
Mo	ng/g	340		332 (2)	322 - 342	NAA
N	%	---		5.61 (1)	---	---
Na	ug/g	4970 ± 100		4890 (1)	---	NAA
Ni	ng/g	---		240 (1)	---	---
P	%	1.05		---	---	---
Pb	ng/g	19 ± 3		< 100	---	---
Rb	ug/g	11		12.75 (2)	12.4 - 13.1	NAA
S	ug/g	3510 ± 50		3514 (1)	---	IDMS
S-32/34	ratio	---		22.624 (1)	---	IDMS
S-33/34	ratio	---		0.1779 (1)	---	IDMS
Sb	ng/g	0.27		0.25 (1)	---	NAA
Sc	ng/g	---		0.94 (1)	---	NAA
Se	ng/g	110 ± 10		100 (2)	90 - 110	NAA
Si	ug/g	< 50		---	---	---
Sn	ng/g	< 500		1.9 (1)	---	NAA
Sr	ug/g	---		3.69 (1)	---	---
U	ng/g	---		< 1	---	NAA
W	ng/g	---		0.43 (1)	---	NAA
Zn	ug/g	46.1 ± 2.2		46.75 (2)	46.6 - 46.9	NAA

COMPOUND	CAS #	UNITS		NBS		CONSENSUS
		Mean		Mean	(n)	
Total Folates	---	ug/g	---	---	0.64 (1)	
Total Pantothenates	---	ug/g	---	45.2	(1)	
Thiamine	---	ug/g	---	4.5	(1)	
Protein	---	%	---	35.8	(1)	
Lactose	---	%	47	---		
L-Ascorbic acid	50817	ug/g	53	43.4	(1)	
Niacin	59676	ug/g	---	9.8	(1)	
Vitamin B6	65236	ug/g	---	4.8	(1)	
Riboflavin	83885	ug/g	---	15	(1)	

TABLE 1549-2: INDIVIDUAL DATA FOR NBS SRM 1549 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Total Folates (ug/g)</u>					<u>Ca (%)</u>				
0.64		VV	85TAN 01		1.2	0.08		XRF	86GIA 01
					1.326	0.026		ITNA	86GRE 01
<u>Total Pantothenates (ug/g)</u>					<u>Cd (ng/g)</u>				
45.2		VV	85TAN 01		0.47	0.09		RTNA	86GRE 01
					<u>Cl (%)</u>				
4.5		VV	85TAN 01		1.085	0.014		ITNA	86GRE 01
<u>Thiamine (ug/g)</u>					<u>Co (ng/g)</u>				
35.8		VV	85TAN 01		4.12	0.27		ITNA	86GRE 01
<u>L-Ascorbic acid (ug/g)</u>					<u>Cr (ng/g)</u>				
43.4		VV	85TAN 01		<	600	L	XRF	86GIA 01
					2.5	0.6		RTNA	86GRE 01
<u>Niacin (ug/g)</u>					<u>Cs (ng/g)</u>				
9.8		VV	85TAN 01		17.6	0.7		ITNA	86GRE 01
<u>Vitamin B6 (ug/g)</u>					<u>Cu (ng/g)</u>				
4.8		VV	85TAN 01		606	10		RTNA	86GRE 01
					650	40		XRF	86GIA 01
<u>Riboflavin (ug/g)</u>					<u>Fe (ug/g)</u>				
15		VV	85TAN 01		1.76	0.13		ITNA	86GRE 01
					2.3	0.16		XRF	86GIA 01
<u>Ag (ng/g)</u>					<u>H2O (%)</u>				
<	0.3		RTNA	86GRE 01	3.6		VV		85TAN 01
<u>Al (ug/g)</u>					<u>Hg (ng/g)</u>				
<	3		RTNA	86GRE 01	<	100	L	XRF	86GIA 01
					0.16	0.015		RTNA	86GRE 01
<u>As (ng/g)</u>					<u>I (ug/g)</u>				
<	50	L	XRF	86GIA 01	3.2	0.3		ITNA	86GRE 01
1.77	0.11		RTNA	86GRE 01	<u>K (%)</u>				
					1.69	0.03		ITNA	86GRE 01
11.6	0.04		ITNA	86GRE 01	1.78	0.2		XRF	86GIA 01
12.1	0.2		XRF	86GIA 01					

TABLE 1549-2: INDIVIDUAL DATA FOR NBS SRM 1549 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mg (ug/g)</u>									
1190	30		ITNA	86GRE 01	22.624			IDMS	84KEL 01
<u>Mn (ng/g)</u>									
233	13		ITNA	86GRE 01	0.1779			IDMS	84KEL 01
330	120		XRF	86GIA 01					
<u>Mo (ng/g)</u>									
322	17		RTNA	86GRE 01	0.25	0.03		RTNA	86GRE 01
342	10		RTNA	84BYR 01					
<u>N (%)</u>									
5.61		VV		85TAN 01				ITNA	86GAU 01
<u>Na (ug/g)</u>									
4890	60		ITNA	86GRE 01	90	40		XRF	86GIA 01
					110	3		ITNA	86GRE 01
<u>Ni (ng/g)</u>									
240	60		XRF	86GIA 01	1.9	0.7		RTNA	86GRE 01
<u>Pb (ng/g)</u>									
< 100	L		XRF	86GIA 01	3.69	0.1		XRF	86GIA 01
<u>Rb (ug/g)</u>									
12.4	0.4		ITNA	86GRE 01	<	1		DNA	86GAU 01
13.1	0.2		XRF	86GIA 01					
<u>S (ug/g)</u>									
3514	29		IDMS	84KEL 01	0.43	0.03		RTNA	84BYR 01
<u>W (ng/g)</u>									
<u>Zn (ug/g)</u>									
					46.6	1.2		ITNA	86GRE 01
					46.9	0.9		XRF	86GIA 01

TABLE 1566-1: COMPILED DATA FOR NBS SRM 1566 OYSTER TISSUE (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS	
			Mean ± SD	Mean ± SD (n)			Mean ± SD	SD (n)	Mean ± SD (n)	SD	Mean ± SD (n)	SD	Mean (n)	Method
Ag	ug/g	0.89 ± 0.09	0.94 ± 0.11 (5)	0.89	0.86 - 1.14	0.89 (1)	0.95 ± 0.13 (4)	(1)	0.95 ± 0.13 (4)	(1)	---	---	---	---
Al	ug/g	---	255 ± 23 (5)	252	231 - 291	231 (1)	252 ± 12 (3)	(3)	252 ± 12 (3)	(3)	291 (1)	(1)	---	---
As	ug/g	13.4 ± 1.9	13.0 ± 1.2 (17)	13	11.1 - 15.5	13.5 ± 1.0 (7)	13.1 ± 1.6 (8)	(8)	13.1 ± 1.6 (8)	(8)	12.7 ± 1.5 (3)	(3)	---	---
B	ug/g	---	7	(1)	---	---	---	---	---	---	7	(1)	TGGS	---
Ba	ug/g	---	5.18	(1)	---	---	---	---	---	5.18 (1)	(1)	---	---	
Br	ug/g	55	53 ± 6 (6)	51.7	45 - 62.6	45 - 62.6	53 ± 6 (6)	(6)	53 ± 6 (6)	(6)	---	---	---	---
Ca	ug/g	1500 ± 200	1400 ± 120 (14)	1426	1200 - 1549	1200 - 1549	1284 ± 78 (3)	(3)	1284 ± 78 (3)	(3)	1510 ± 20 (7)	(7)	XRF	1300 (1) MPDES
Cd	ug/g	3.5 ± 0.4	3.43 ± 0.16 (17)	3.43	3.2 - 3.68	3.46 ± 0.16 (8)	3.46 ± 0.16 (8)	(8)	3.46 ± 0.16 (8)	(8)	3.44 ± 0.18 (6)	(6)	IDMS	3.27 (2) ASV
Ce	ng/g	---	420 (2)	---	410 - 430	410 - 430	420 (2)	(2)	420 (2)	(2)	---	---	---	---
Cl	%	1.0	0.99 ± 0.02 (3)	0.98	0.97 - 1.01	0.97 - 1.01	0.99 ± 0.02 (3)	(3)	0.99 ± 0.02 (3)	(3)	---	---	---	---
Co	ng/g	400	370 ± 40 (12)	340	310 - 440	310 - 440	350 ± 17 (3)	(3)	360 ± 50 (8)	(8)	---	---	440 (1) SSMS	---
Cr	ng/g	690 ± 270	650 ± 80 (11)	650	540 - 750	540 - 750	680 (1)	(1)	660 ± 90 (4)	(4)	660 ± 60 (3)	(3)	XRF	---
Cs	ng/g	---	40.5 (2)	---	31 - 50	31 - 50	40.5 (2)	(2)	40.5 (2)	(2)	---	---	645 (2)	---
Cu	ug/g	63.0 ± 3.5	63 ± 2 (21)	62.9	60 - 69	64.9 ± 1.2 (5)	64.9 ± 1.2 (5)	(5)	63 ± 5 (3)	(3)	61 ± 4 (10)	(10)	XRF	62.8 (2) HPLC
Cu	ug/g	---	---	---	---	---	---	---	---	---	64 (1)	ICPMS	67 (1) SSMS	---
Dy	ng/g	---	< 200	---	---	---	< 200	---	< 200	---	---	---	---	---
Eu	ng/g	---	16 ± 3 (3)	15	13.9 - 20	13.9 - 20	16 ± 3 (3)	(3)	16 ± 3 (3)	(3)	---	---	---	---
F	ug/g	5.2	5.15 (2)	4.9	4.9 - 5.4	4.9 - 5.4	4.9 (2)	(2)	4.9 (2)	(2)	5.15 (2) ISE	(2)	---	---
Fe	ug/g	195 ± 34	195 ± 11 (22)	196	177 - 212.5	177 - 212.5	205 ± 5 (4)	(4)	194 ± 17 (5)	(5)	191 ± 10 (10)	(10)	HPLC	193 (1) SSMS
H2O-	%	---	5.0 (2)	---	---	---	---	---	---	---	---	---	2.6 (1) GRAY	---
Hf	ng/g	---	80 (1)	---	---	---	80 (1)	(1)	80 (1)	(1)	---	---	---	---
Hg	ng/g	57 ± 15	56 ± 4 (6)	56	49 - 60	54 (1)	54 ± 5 (3)	(3)	54 ± 5 (3)	(3)	60 (2)	(2)	---	---
Ho	ng/g	---	< 20 <sup>c</sup>	---	---	---	< 200	---	< 200	---	---	---	---	---
I	ug/g	2.8	2.8 ± 0.3 (7)	2.79	2.34 - 3.21	2.34 - 3.21	2.8 ± 0.3 (7)	(7)	2.8 ± 0.3 (7)	(7)	---	---	---	---
K	%	0.969 ± 0.005	0.93 ± 0.07 (12)	0.9620	0.8 - 1.01	0.8 - 1.01	0.88 ± 0.07 (6)	(6)	0.98 ± 0.02 (4)	(4)	0.976 (1) XRF	(1)	0.977 (1) FE	---
La	ng/g	---	370 (2)	---	330 - 410	330 - 410	370 (2)	(2)	370 (2)	(2)	---	---	---	---
Li	ng/g	---	323 (1)	---	---	---	323 (1)	(1)	323 (1)	(1)	---	---	---	---
Lu	ng/g	---	< 60	---	---	---	< 60	---	< 60	---	---	---	---	---
Mg	ug/g	1280 ± 90	1330 ± 100 (12)	1310	1150 - 1451	1150 - 1451	1280 (1)	(1)	1310 ± 130 (3)	(3)	1340 ± 100 (7)	(7)	XRF	---
Mn	ug/g	17.5 ± 1.2	17.0 ± 1.2 (22)	17.2	14.5 - 19.3	14.5 - 19.3	17 ± 2 (4)	(4)	16.1 ± 1.0 (5)	(5)	17.3 ± 0.6 (11)	(11)	ICPMS	19.3 (1) SSMS
Mo	ng/g	< 200	140 ± 40 (4)	109	100 - 180	100 - 180	180 (1)	(1)	160 (1)	(1)	100 (1)	(1)	COLOR	---
N	%	---	6.62 (1)	---	---	---	---	---	---	---	---	---	---	---
Na	ug/g	5100 ± 300	4950 ± 220 (10)	4920	4600 - 5300	4600 - 5300	4780 ± 350 (6)	(6)	5025 ± 260 (4)	(4)	4920 (1) FE	(1)	---	---
Ni	ug/g	1.03 ± 0.19	1.01 ± 0.09 (9)	0.98	0.89 - 1.15	0.89 - 1.15	1.12 (2)	(2)	0.98 (1)	(1)	0.98 ± 0.08 (4)	(4)	POL	1.30 (1) SSMS
Ni	ug/g	---	---	---	---	---	---	---	---	---	1.05 (1) VOLT	(1)	---	---

TABLE 1566-1: COMPILED DATA FOR NBS SRM 1566 OYSTER TISSUE (cont.)

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Total Folates (ug/g)</u>						<u>As (ug/g) cont.</u>				
1.2		VV	85TAN 01			12.1	1	HAA	85NAR 03	
<u>Total Pantothenates (ug/g)</u>						12.2	1.1	IENA	82GLA 02	
10.2		VV	85TAN 01			12.4		IENA	84GLA 02	
<u>Thiamine (ug/g)</u>						12.9	0.85	ICPES	84SUN 01	
5.1		VV	85TAN 01			13	0.6	ITNA	86KRA 01	
<u>Protein (%)</u>						13	1.2	ITNA	79KOB 03	
41.4		VV	85TAN 01			13.1	0.3	HAA	83MAH 01	
<u>Nicotinic acid (ug/g)</u>						13.17	0.34	HAA	81UTH 01	
101.6		VV	85TAN 01			13.2	0.4	HAA	83MAH 04	
<u>Vitamin B-6 (ug/g)</u>						13.4	0.3	HAA	84NAR 01	
1.4		VV	85TAN 01			13.9	0.52	AA	85SAK 01	
<u>Riboflavin (ug/g)</u>						14	3	ICPES	84NAD 01	
9.8		VV	85TAN 01			15	3	NAA	85LEP 01	
<u>Ag (ug/g)</u>						15.5	0.3	11	HAA	82JON 01
0.86	0.09	IENA	86CHI 01			15.87	3.5	ITNA	86CHI 01	
0.88	0.05	ITNA	84ALK 01			<u>B (ug/g)</u>				
0.89	0.02	FAA	85OKA 02			7	1	TCGS	82GLA 02	
0.93	0.06	ITNA	86CHI 01			<u>Ba (ug/g)</u>				
1.14	0.13	ITNA	86KRA 01			<	4	NAA	85LEP 01	
3.6	0.3	ICPMS	85PAR 01			5.18	0.24	ICPES	84NAD 01	
<u>Al (ug/g)</u>						<u>Br (ug/g)</u>				
231	9	FAA	86KRA 02			45	1.4	ITNA	79KOB 03	
240	7	ITNA	86KRA 02			50.57	0.45	ITNA	86CHI 01	
252	6	ITNA	86KRA 01			51.7	7.1	IENA	86CHI 01	
263	8	IENA	85GLA 02			52.9	3.3	IENA	86CHI 01	
291	24	ICPES	84NAD 01			55	17	IENA	84GLA 11	
366	9	HPLC	85BON 01			62.6	0.4	NAA	85LEP 01	
<u>As (ug/g)</u>						180		EXRF	81PAR 01	
9.2	0.6	ICPMS	85PAR 01			<u>Ca (ug/g)</u>				
9.7		ICPES	84MAR 01			880	3370	R	AA	80UCH 01
11.1	1.1	ICPES	83OLI 01			1200	400	CPXRF	85SIM 01	
11.3	1	RTNA	85GAU 04			1200	400	NAA	85LEP 01	
11.96	0.56	IENA	86CHI 01			1300		MPOES	85ZHA 01	
						1300	100	ICPES	84NAD 01	
						1300	200	ITNA	86KRA 01	
						1353	146	RTNA	82MUR 01	
						1426	44	WXRF	84ALK 01	
						1499		ICPES	83CHA 01	
						1500	100	ICPES	85WHT 02	
						1500	100	ICPES	84SUN 01	
						1500	100	ICPES	84SUN 01	

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ca (ug/g) cont.</u>						<u>Co (ng/g) cont.</u>				
1510	20	11	ICPES	82JON 01		390	60	IENA	86CHI 01	
1530	30	11	ICPES	82JON 01		420	70	IENA	86CHI 01	
1549		6	ICPES	83CHA 01		440	30	SSMS	81BER 01	
1738	153		ITNA	84ALK 01		440	70	ITNA	86CHI 01	
4500			EXRF	81PAR 01		1200	100	ICPES	81BER 01	
<u>Cd (ug/g)</u>						<u>Cr (ng/g)</u>				
3.2	0.1		FAA	82SUZ 01		340	90	11	ICPES	82JON 01
3.2	0.15		ICPES	84SUN 01		540	310	11	CPXRF	84SIM 01
3.24	0.29		ASV	82SAT 02		550	60	ITNA	84ALK 01	
3.25	0.05	6	ICPES	850KA 02		600	100	SSMS	81BER 01	
3.3	0.3		ASV	82GAJ 01		600	200	11	ICPES	82JON 01
3.31	0.03		AA	850KA 02		620	30	NAA	85LEP 01	
3.4		14	FAA	80CHA 09		650	50	ICPES	84SUN 01	
3.4	0.22		FAA	81CHA 01		680	20	FAA	850KA 02	
3.43	0.07	6	ICPES	850KA 02		700	200	ITNA	79KOB 03	
3.49	0.01		IDMS	84BRO 03		720	70	ICPES	84SUN 01	
3.5	0.5		AA	84KAN 01		750	100	ITNA	86CHI 01	
3.54	0.04	11	ICPES	82JON 01		750	120	D	CPXRF	84SIM 02
3.6		14	FAA	80CHA 09		750	120	11	CPXRF	84SIM 01
3.6	0.1		ICPES	84SUN 01		1100	200	ICPES	81BER 01	
3.6	0.1		FAA	850KA 02		1450	310	ITNA	86KRA 01	
3.61	0.03	11	ICPES	82JON 01						
3.68	0.06		FAA	83DEL 01		<u>Cs (ng/g)</u>				
4.7	1		ICPES	84NAD 01		31	3	NAA	85LEP 01	
						50	4	ITNA	84ALK 01	
<u>Ce (ng/g)</u>						<u>Cu (ug/g)</u>				
410	180		ITNA	86KRA 01		53		6	ICPES	83CHA 01
430	20		NAA	85LEP 01		55		6	ICPES	83CHA 01
						60	6	ICPES	84NAD 01	
0.827	0.007		NAA	85LEP 01		60	6.7	ITNA	84ALK 01	
0.97	0.04		IENA	84GLA 11		60.5	4.2	13	HPLC	85BON 01
0.98	0.02		ITNA	86KRA 01		60.7	0.7	6	ICPES	850KA 02
1.011	0.05		ITNA	84ALK 01		60.9	0.5	6	ICPES	850KA 02
						61			XRF	80SUZ 02
<u>Co (ng/g)</u>						61	2.1		RTNA	82MUR 01
						61.8	0.9	11	ICPES	82JON 01
220	30		VOLT	84ADE 02		62.6	3.7		ICPES	84SUN 01
310	10		ITNA	84ALK 01		62.9	0.5	11	ICPES	82JON 01
317	14		ITNA	86KRA 01		63			AA	80UCH 01
340		14	FAA	80CHA 09		64	2.1		ICPMS	85PAR 01
340		14	FAA	80CHA 09		64.4	1		AA	850KA 02
340	10		ITNA	86CHI 01		64.5	0.6		ICPES	81BER 01
340	20		ITNA	79KOB 03		65		14	FAA	80CHA 09
346	6		NAA	85LEP 01		65			ICPES	84SUN 01
370	10		FAA	850KA 02		65.2	1.5	13	HPLC	85BON 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g) cont.</u>						<u>H2O- (%)</u>				
66			FAA	81BER 01		2.6			GRAV	84NAR 01
66		14	FAA	80CHA 09		2.6		D	GRAV	85MAR 03
67	2		SSMS	81BER 01		7.3		VV	85TAN 01	
69	14		ITNA	86KRA 01						
128	2		AA	81UCH 01						
189			EXRF	81PAR 01						
<u>Dy (ng/g)</u>						<u>Hf (ng/g)</u>				
<	200		NAA	85LEP 01		80	8	NAA	85LEP 01	
<u>Eu (ng/g)</u>						<u>Hg (ng/g)</u>				
13.9	0.7		NAA	85LEP 01		40		CVAA	84GLA 02	
15	8		ITNA	86KRA 01		49	7	RTNA	84DRA 01	
20	10		ITNA	79KOB 03		54	4	CVAA	86GAU 01	
						56	5	RTNA	84DEL 01	
<u>F (ug/g)</u>						58	6	7	RTNA	80GAL 02
4.9	0.5		ISE	83KNA 01		60		ICPES	84MAR 01	
5.4	1.2		ISE	84GLA 02		60	10	ICPES	84SUN 01	
<u>Fe (ug/g)</u>						<u>Ho (ng/g)</u>				
161	2.5		ICPES	84SUN 01		<	200	NAA	85LEP 01	
171	10		ICPES	84NAD 01		<u>I (ug/g)</u>				
177			ICPES	84SUN 01		2.337	0.074	RTNA	80GVA 01	
178	4		ITNA	79KOB 03		2.5	0.2	IENA	84FAR 01	
178	32		ITNA	86KRA 01		2.7	0.7	IENA	84GLA 11	
179		6	ICPES	83CHA 01		2.79		NAA	79HEC 01	
180		6	ICPES	83CHA 01		3.062	0.128 35	RTNA	81ALL 01	
190.5	9		ITNA	84ALK 01		3.209	0.134	RTNA	81STR 01	
191	5	11	ICPES	82JON 01		3.209	0.134 34	RTNA	81ALL 01	
192	8		ICPES	81BER 01		<u>K (%)</u>				
193	4		SSMS	81BER 01		0.475		MPOES	85ZHA 01	
194	9	11	ICPES	82JON 01		0.8	0.15	ITNA	86KRA 01	
196	6	11	ICPES	82JON 01		0.82	0.07	ITNA	86CHI 01	
198		14	FAA	80CHA 09		0.86	0.03	IENA	86CHI 01	
200	4	13	HPLC	85BON 01		0.87	0.03	ITNA	79KOB 03	
200	5	6	ICPES	85OKA 02		0.96	0.03	NAA	85LEP 01	
201	3	6	ICPES	85OKA 02		0.962	0.03	ITNA	84ALK 01	
203	5	13	HPLC	85BON 01		0.963	0.031	ICPES	85WHI 02	
203	8	11	ICPES	82JON 01		0.9763	0.0301	WXRF	84ALK 01	
204	2		AA	85OKA 02		0.977		FE	80UCH 01	
209			AA	80UCH 01		0.98	0.02 11	ICPES	82JON 01	
209		14	FAA	80CHA 09		0.98	0.04 11	ICPES	82JON 01	
210	4		NAA	85LEP 01		1.01	0.06	ICPES	84NAD 01	
212.5	37		IENA	86CHI 01		1.89		EXRF	81PAR 01	
218.9	9		ITNA	86CHI 01						
576			EXRF	81PAR 01						

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>La (ng/g)</u>					<u>Mn (ug/g) cont.</u>				
330	110		ITNA	86KRA 01	18.6	0.3	AA	85OKA 02	
410	20		NAA	85LEP 01	19		AA	80UCH 01	
<u>Li (ng/g)</u>					19.3	1.1	ICPMS	85PAR 01	
323	6		AA	85EVA 01	21	3	NAA	85LEP 01	
<u>Lu (ng/g)</u>					49		EXRF	81PAR 01	
<	60		NAA	85LEP 01	<u>Mo (ng/g)</u>				
980	30		ICPES	84NAD 01	100	70	L	ICPES	82JON 01
1150			ICPES	84SUN 01	109	100	11	ICPES	82JON 01
1200	100		ITNA	86KRA 01	160	72	COLOR	85EVA 02	
1270		6	ICPES	83CHA 01	180	40	IENA	86CHI 01	
1277	72		RTNA	82MUR 01	<u>N (%)</u>				
1280			AA	80UCH 01	6.62		VV	85TAN 01	
1310	20		ICPES	85WHI 02	<u>Na (ug/g)</u>				
1380	100		ICPES	84SUN 01	4200	300	IENA	86CHI 01	
1410	20	11	ICPES	82JON 01	4600	240	ITNA	79KOB 03	
1430		6	ICPES	83CHA 01	4700	200	ITNA	86CHI 01	
1430	38		WXRF	84ALK 01	4800		6	ICPES	83CHA 01
1430	40	11	ICPES	82JON 01	4800		6	ICPES	83CHA 01
1451	213		ITNA	84ALK 01	4920		FE	80UCH 01	
<u>Mn (ug/g)</u>					5030	40	ITNA	86KRA 01	
3			XRF	80SUZ 02	5070	20	NAA	85LEP 01	
14	2		SSMS	81BER 01	5082	258	ITNA	84ALK 01	
14.5			FAA	81BER 01	5200	400	ICPES	84NAD 01	
15	1.2		ITNA	79KOB 03	5300	100	ICPES	85WHI 02	
15	2.4		ITNA	84ALK 01	9750		MPOES	85ZHA 01	
15.3	0.15		ICPES	84SUN 01	<u>Ni (ug/g)</u>				
16.1	1.1		ICPES	84NAD 01	0.89		POL	85UTO 01	
16.57	0.97		IENA	86CHI 01	0.92	0.04	11	ICPES	82JON 01
16.7		6	ICPES	83CHA 01	0.95	0.04	ICPES	84SUN 01	
16.7		6	ICPES	83CHA 01	0.97	0.09	11	ICPES	82JON 01
17	1		ITNA	86KRA 01	0.98	0.1	IENA	86CHI 01	
17.1	0.4		RTNA	82MUR 01	1.05	0.02	VOLT	84ADE 02	
17.2	0.2	11	ICPES	82JON 01	1.1		FAA	81BER 01	
17.2	0.6		FAA	81CHA 01	1.1	0.17	ICPES	84SUN 01	
17.3	0.3	6	ICPES	85OKA 02	1.15	0.02	FAA	85OKA 02	
17.4	0.6	11	ICPES	82JON 01	1.3	0.1	SSMS	81BER 01	
17.4	0.6	6	ICPES	85OKA 02	1.6	0.3	ICPES	81BER 01	
17.5	0.7		ICPES	81BER 01	1.6	0.5	NAA	85LEP 01	
17.8	0.9	11	ICPES	82JON 01					
17.9	0.42		ICPES	84SUN 01					
17.9	1.3		ICPES	85WHI 02					

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>P (ug/g)</u>										
5600	200		ICPES	84NAD 01		3.8	0.5		ICPMs	85PAR 01
6420	150	11	COLOR	84LIN 01		4.2	0.6		ITNA	86KRA 01
6530	120	11	COLOR	84LIN 01		4.27	0.19		ITNA	86CHI 01
7000	100		ICPES	84SUN 01		4.49	0.05		ITNA	84ALK 01
7057	231		WXRF	84ALK 01		4.6	0.1		NAA	85LEP 01
7266	1144		IENA	84ALK 01		5.04	0.1		IENA	86CHI 01
7600	400	6	FAA	81LAN 01		5.35	0.32		AA	85EVA 01
7700	100		ICPES	85WHI 02		20			EXRF	81PAR 01
7700	400	14	FAA	84LIN 01						
7800	100		CPAA	83MAS 02						
7800	200	11	ICPES	82JON 01						
7800	300	6	FAA	81LAN 01		7977	248		WXRF	84ALK 01
7800	500	14	FAA	84LIN 01		8700	200		WXRF	86BOW 01
7900	100	11	ICPES	82JON 01		8700	200		CB	86BOW 01
8100	900	14	FAA	84LIN 01		9600	200		ICPES	85WHI 02
8200			ICPES	84SUN 01						
<u>Pb (ng/g)</u>										
						9.8	1.2		NAA	85LEP 01
420	20	14	FAA	84LUN 01		150	40		ITNA	79KOB 03
440	40		FAA	82RAI 01		400	300		ICPES	83OLI 01
450		6	FAA	81HIN 01						
450		6	FAA	82KOI 01						
460	50	14	FAA	84LUN 01						
460	60	14	FAA	84LUN 01		15	2		ITNA	86CHI 01
470	10		FAA	81CHA 01		69			ITNA	84GLA 11
480		6	FAA	82KOI 01		71	3		ITNA	86KRA 01
480		6	FAA	81HIN 01		72	4		NAA	85LEP 01
480	10		FAA	82ATS 02		79.5			ITNA	86GAU 01
480	20		FAA	850KA 02		89	5		ITNA	79KOB 03
500		14	FAA	80CHA 09						
500	20		ASV	82GAJ 01						
500	200	11	ICPES	82JON 01						
500	300	11	ICPES	82JON 01		1.6	0.4		NAA	85LEP 01
510		14	FAA	80CHA 09		1.7	0.14		ICPES	84SUN 01
510	60		ASV	82SAT 02		1.7	0.2		ICPES	83OLI 01
520	30		ICPES	84SUN 01		1.8	0.2		HAA	82MAY 01
540	10		ICPES	84SUN 01		1.94	0.07		ASV	84ADE 01
560	40	14	FAA	84LUN 01		2	0.2		HAA	84NAR 01
2600	200		ICPMS	85PAR 01		2	0.2		HAA	85NAR 03
						2.02	0.9		ITNA	84ALK 01
<u>Pd (nm/g)</u>										
<	2		RTNA	85BEM 01		2.04	0.04		IENA	86CHI 01
						2.05	0.05		HAA	82JUL 01
						2.07	0.03		FAA	82JUL 01
						2.1	0.2		ITNA	84LAN 01
						2.18	0.25	11	GC	84SIU 01
						2.21	0.08		ITNA	86CHI 01
						2.22	0.03	11	HAA	82JON 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Se (ug/g) cont.</u>										
2.23	0.26	11	GC	84SIU 01		<	200		NAA	85LEP 01
2.26	0.24		CSV	83AHM 02		7.32	0.91		ICPES	84NAD 01
2.3			ICPES	84MAR 01						
2.3	0.3		ITNA	86KRA 01						
2.42	0.08	11	HAA	82JON 01						
2.6	0.3		HAA	85CUT 01		<	5		ICPES	84SUN 01
<u>Se(IV) (ug/g)</u>										
<	0.01		HAA	85CUT 01		112	1		IDMS	83KEL 01
						117	8		DNA	85GAU 04
<u>Se(VI) (ug/g)</u>										
<	0.01		HAA	85CUT 01		126			DNA	84GLA 02
						129			DNA	84GLA 11
<u>Si (ug/g)</u>										
1100	100		ICPES	84NAD 01		1.64	0.05		RTNA	82MUR 01
						2.316	0.006		IDMS	85FAS 02
						2.44	0.06	11	ICPES	82JON 01
<u>Sm (ng/g)</u>										
63	15		ITNA	86KRA 01		2.5	0.2		ITNA	86KRA 01
76	7		NAA	85LEP 01		2.67			COLOR	85EVA 02
<u>Sr (ug/g)</u>										
8.58	0.42		ICPES	84NAD 01						
9.87	0.35	6	ICPES	85OKA 02						
9.9	0.68		AA	85EVA 01						
9.9	1.1		FAA	82SUZ 03						
9.96	0.2	6	ICPES	85OKA 02						
10.5	0.3		AA	85OKA 02						
10.8	0.6		IENA	85GAU 04						
10.99	0.76		IENA	86CHI 01						
92			EXRF	81PAR 01						
<u>Ta (ng/g)</u>										
						716	30		ICPES	84NAD 01
						730	10		NAA	85LEP 01
5.5	0.6		NAA	85LEP 01		746	2.2		ICPES	84SUN 01
						750			XRF	80SUZ 02
<u>Tb (ng/g)</u>										
						805	7	6	ICPES	85OKA 02
						805	36		ITNA	84ALK 01
15	2		NAA	85LEP 01		822	4	6	ICPES	85OKA 02
						824	9		ICPES	85WHI 02
<u>Th (ng/g)</u>										
						843	12	11	ICPES	82JON 01
						848	5.7		ICPES	84SUN 01
52	2		NAA	85LEP 01		848.5	4.5		IENA	86CHI 01
						850	14		ITNA	86KRA 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Zn (ug/g) cont.</u>					
851	37		SSMS	81BER 01	
851	43		ICPES	81BER 01	
859	9	11	ICPES	82JON 01	
860			AA	80UCH 01	
860	6		AA	85OKA 02	
860	50		ICPMS	85PAR 01	
869	8	11	ICPES	82JON 01	
870	35		ITNA	79KOB 03	
874		14	FAA	80CHA 09	
878	15	11	ICPES	82JON 01	
880		14	FAA	80CHA 09	
884.6	17		ITNA	86CHI 01	
887.6	10		IENA	86CHI 01	
2953			EXRF	81PAR 01	

TABLE 1567-1: COMPILED DATA FOR NBS SRM 1567 WHEAT FLOUR (revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS	
		Mean ± SD	n	Mean ± SD	n			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean (n) Method	
Al	ug/g	---		17	(1)	---	---	---		---		---		17 (1) SIMS	
As	ng/g	6		5.7 ± 0.3	(10)	5.6	5.4 - 6.3	6	(1)	5.52 ± 0.12	(7)	6	(1)	---	
B	ug/g	---		1.5	(1)	---	---	---		---		---		1.5 (1) TGCS	
Be	ng/g	---		< 30		---	---	---		---		< 30		---	
Bi	ng/g	---		< 8		---	---	---		---		< 8		---	
Br	ug/g	9		8.4 ± 1.2	(7)	8.5	6.3 - 9.9	---		8.7 ± 0.9	(5)	---		7.4 (2) XRF	
Ca	ug/g	190 ± 10		190 ± 11	(17)	195	170 - 208	185 ± 10	(6)	---		197 ± 4	(8)	208 (1) FAE	
Ca	ug/g	---		---		---	---	---		---		---		174 (1) XRF	
Cd	ng/g	32 ± 7		30 ± 5	(10)	30	20 - 40	30	(1)	30.8	(2)	35 ± 8	(6)	24.5 (2) ASV	
Cl	ug/g	---		591 ± 20	(4)	580	570 - 615	---		591 ± 20	(4)	---		---	
Co	ng/g	---		21	(1)	---	---	---		21	(1)	---		---	
Cr	ng/g	---		290 ± 80	(4)	240	225 - 400	232	(2)	---		350	(2)	---	
Cs	ng/g	---		3.5	(1)	---	---	---		3.5	(1)	---		---	
Cu	ug/g	2.0 ± 0.3		1.96 ± 0.10	(20)	2	1.78 - 2.08	2	(2)	1.93 ± 0.10	(4)	2.04 ± 0.08	(10)	2.035 (1) IDMS	
Cu	ug/g	---		---		---	---	---		---		---		1.80 (1) ASV	
Cu	ug/g	---		---		---	---	---		---		---		1.84 (2) XRF	
F	ng/g	---		40	(1)	---	---	---		---		---		40 (1) ISE	
Fe	ug/g	18.3 ± 1.0		17.8 ± 1.2	(18)	17.7	15.2 - 19.6	15.9 ± 1.0	(3)	17.2	(1)	18.4 ± 0.9	(12)	15.2 (1) FAE	
Fe	ug/g	---		---		---	---	---		---		---		17.3 (2) XRF	
Ge	ng/g	---		< 20		---	---	---		---		---		---	
H2O-	%	---		10.6	(2)	---	9.8 - 11.5	---		---		---		11.5 (1) GRAV	
Hg	ng/g	1.0 ± 0.8		1.08 ± 0.10	(4)	1	1.0 - 1.22	---		1.08 ± 0.10	(4)	---		---	
I	ng/g	---		1.97	(1)	---	---	---		1.97	(1)	---		---	
K	ug/g	1360 ± 40		1300 ± 90	(12)	1310	1130 - 1500	1190 ± 110	(3)	1392	(1)	1316 ± 100	(8)	1220 (1) XRF	
La	ng/g	---		1.8	(1)	---	---	---		1.8	(1)	---		---	
Li	ng/g	---		41.4	(1)	---	---	41.4	(1)	---		---		---	
Mg	ug/g	---		400 ± 21	(10)	398	370 - 429	376	(2)	---		406 ± 18	(8)	---	
Mn	ug/g	8.5 ± 0.5		8.6 ± 0.6	(21)	8.55	7.2 - 9.9	9.1 ± 1.0	(3)	8.5 ± 0.2	(3)	8.4 ± 0.2	(11)	6.7 (1) AE-AF	
Mn	ug/g	---		---		---	---	---		---		---		8.70 (2) XRF	
Mo	ng/g	400		420 ± 30	(8)	420	380 - 470	---		445	(2)	402 ± 18	(5)	430 (1) COLOR	

TABLE 1567-1: COMPILED DATA FOR NBS SRM 1567 WHEAT FLOUR (cont.)

ELE	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		AA		NAA		ICPES		OTHER METHODS	
		Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)
N	%	---		2.2	(1)	---		---		---		---		---		---	
Na	ug/g	8.0 ± 1.5		11.1 ± 1.8	(4)	10.4	9 - 13	---		11.8 ± 1.3	(3)	---		9	(1)	FAE	
Ni	ng/g	180		190 ± 30	(4)	175	160 - 230	175	(1)	---		180	(2)	230	(1)	POL	
Ni	ng/g	---		---		---		---		---		---		110	(1)	XRF	
P	ug/g	---		1390 ± 30	(7)	1390	1350 - 1450	---		---		1390 ± 30	(7)	---		---	
Pb	ug/g	0.02 ± 0.01		0.018	(1)	---		---		---		---		0.018	(1)	ASV	
Rb	ug/g	1		0.95 ± 0.03	(3)	0.94	0.93 - 0.99	0.93	(1)	0.99	(1)	---		0.94	(1)	XRF	
S	ug/g	---		1810 ± 110	(7)	1810	1623 - 1980	---		---		1860	(1)	1810 ± 130	(5)	CB	
S	ug/g	---		---		---		---		---		---		1780	(1)	XRF	
Sb	ng/g	---		19.85	(2)	---	1.7 - 38	---		19.8	(2)	---		---		---	
Sc	ng/g	---		0.58	(2)	---	0.5 - 0.67	---		0.58	(2)	---		---		---	
Se	ug/g	1.1 ± 0.2		1.03 ± 0.08	(35)	1.03	0.87 - 1.17	0.98 ± 0.06	(14)	1.11 ± 0.05	(11)	0.97 ± 0.14	(4)	1	(1)	CSV	
Se	ug/g	---		---		---		---		---		---		0.95	(1)	GC-MS	
Se	ug/g	---		---		---		---		---		1.03 ± 0.08	(5)	XRF		---	
Sm	ng/g	---		0.82	(1)	---	---	---		0.82	(1)	---		---		---	
Sr	ug/g	---		0.97 ± 0.11	(4)	0.97	0.82 - 1.08	0.97	(1)	---		1.05	(2)	0.82	(1)	SR	
Te	ng/g	< 2		---		---		---		---		---		---		---	
Tl	ng/g	---		2.7 ± 0.6	(3)	3.0	2.0 - 3.0	---		---		---		2.7 ± 0.6	(3)	ASV	
U	ng/g	---		0.95	(1)	---	---	---		0.95	(1)	---		---		---	
V	ng/g	---		11.25	(2)	---	11.2 - 11.3	---		11.2	(1)	---		11.3	(1)	COLOR	
Zn	ug/g	10.6 ± 1.0		10.6 ± 0.4	(17)	10.6	9.9 - 11.3	9.9	(1)	10.9	(1)	10.7 ± 0.4	(14)	10.3	(1)	XRF	
COMPOUND		CAS #		UNITS		NBS		CONSENSUS		CONSENSUS							
Total Folates		---		ug/g		---		0.22 (1)									
Total Pantethenates		---		ug/g		---		3.1 (1)									
Thiamine		---		ug/g		---		2.5 (1)									
Protein		---		%		---		12.4 (1)									
Nicotinic Acid		59676		ug/g		---		14.7 (1)									
Vitamin B-6		65236		ug/g		---		0.72 (1)									
Riboflavin		83885		ug/g		---		0.56 (1)									

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference	
<u>Total Folates (ug/g)</u>										
0.22		VV	85TAN 01		<	30	L	ICPES	82KUE 01	
<u>Total Pantothenates (ug/g)</u>										
3.1		VV	85TAN 01		<	8	L	ICPES	82HAH 01	
<u>Thiamine (ug/g)</u>										
2.5		VV	85TAN 01		6.3	0.4		CPXRF	84BIS 01	
					7.6	0.7		IENA	84GLA 11	
					8.3			ITNA	85GAU 04	
					8.5	1.4		XRF	86GIA 01	
12.4		VV	85TAN 01		8.6			IENA	85GAU 04	
					9.3			ITNA	86GAU 01	
<u>Nicotinic acid (ug/g)</u>										
14.7		VV	85TAN 01		9.9	1.5		ITNA	78GIL 01	
<u>Vitamin B-6 (ug/g)</u>										
0.72		VV	85TAN 01		110	4		CPXRF	84BIS 01	
					170	20		ICPES	85WHI 02	
					173		38	AA	81YAS 01	
					174	10		XRF	86GIA 01	
					179		38	AA	81YAS 01	
					181		38	AA	81YAS 01	
0.56		VV	85TAN 01		183		38	AA	81YAS 01	
					193			ICPES	81WOL 01	
<u>Riboflavin (ug/g)</u>										
17		SIMS	83RAM 01		194	6	11	ICPES	82JON 01	
					195	2	6	ICPES	82KUE 01	
<u>Al (ug/g)</u>										
17		SIMS	83RAM 01		195	3	6	ICPES	82KUE 01	
					196	2	6	ICPES	82KUE 01	
<u>As (ng/g)</u>										
<	30	L	XRF	86GIA 01	197		38	AA	81YAS 01	
5.4	0.5		RTNA	78GIL 01	198	5	1	ICPES	81WOL 02	
5.4	0.5	7	RTNA	77GIL 03	199		38	AA	81YAS 01	
5.4	0.5	7	RTNA	80GAL 02	199		4	11	ICPES	82JON 01
5.6	1	7	RTNA	77GIL 03	204		1	ICPES	81WOL 02	
5.6	1	7	RTNA	80GAL 02	208	34		FAE	83MAR 04	
5.6	1		RTNA	84DEL 01	217	9	12	FAA	85CAR 02	
5.7			RTNA	85TIA 01	<u>Cd (ng/g)</u>					
6	0.3		HAA	85YAM 01	20			ASV	82GAJ 01	
6	1	H	ICPES	82HAH 01	29	4		ASV	82SAT 02	
6.3	0.4		RTNA	84BYR 02	30	1	7	RTNA	80GAL 02	
30	10		COLOR	77BUR 01	30	10		FAA	80SCH 08	
<u>B (ug/g)</u>										
1.5		TCGS	82GLA 02		30	20	6	ICPES	82KUE 01	
					30	20	6	ICPES	82KUE 01	
					30	20	6	ICPES	82KUE 01	
					31.7	1		RTNA	84BYR 02	
					32	3		ICPES	83SCH 04	
					40	10	11	ICPES	82JON 01	
					50	30	11	ICPES	82JON 01	

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cl (ug/g)</u>					<u>Cu (ug/g) cont.</u>					
570	50		IENA	84GLA 11		2.2	0.1		ICPES	83SCH 04
580	30		ITNA	85GAU 04		2.6	0.2		FAE	83MAR 04
600	30		ITNA	84GLA 11		2.6	1	12	FAA	85CAR 02
615			ITNA	86GAU 01						
<u>Co (ng/g)</u>					<u>F (ng/g)</u>					
21	4		ITNA	78GIL 01		< 200	L	ISE	84GLA 02	
1970	280		RTNA	84BYR 02		40	20	ISE	83KNA 01	
<u>Cr (ng/g)</u>					<u>Fe (ug/g)</u>					
<	250	L	ICPES	82KUE 01		11.5	6.1	12	FAE	83MAR 04
<	250	L	ICPES	82KUE 01		14.8	1.2	2	FAA	84MIL 01
<	250	L	ICPES	82KUE 01		15.2	0.5	12	FAE	83MAR 04
<	300	L	XRF	86GIA 01		16.2	0.5	2	FAA	84MIL 01
225	100		FAA	85CAR 01		16.7	3.8	12	FAA	85CAR 02
240	10		FAA	83CAR 02		17	1	11	ICPES	82JON 01
300	100	11	ICPES	82JON 01		17.1	0.8	11	ICPES	82JON 01
400	200	11	ICPES	82JON 01		17.1	4.8		XRF	86GIA 01
760	160		FAE	83MAR 04		17.2	0.6		ITNA	78GIL 01
						17.5	1.2		CPXRF	84BIS 01
						17.7	0.7	6	ICPES	82KUE 01
<u>Cs (ng/g)</u>						17.9	0.8	11	ICPES	82JON 01
						18	1	11	ICPES	82JON 01
<	200	L	ITNA	82GLA 02		18.4	0.8	1	ICPES	81WOL 02
3.5			ITNA	86GAU 01		18.4	1	6	ICPES	82KUE 01
						18.6	1.2		ICPES	80SCH 08
<u>Cu (ug/g)</u>						18.7	2.1	6	ICPES	82KUE 01
						19.3	1.1		ICPES	81KNA 01
1.6	0.3	12	FAA	85CAR 02		19.6		1	ICPES	81WOL 02
1.78			RTNA	85TIA 01		19.6			ICPES	81WOL 01
1.8			ASV	83HOL 01		23.6	3.9	12	FAA	85CAR 02
1.8	0.1		CPXRF	84BIS 01						
1.8	0.2	11	ICPES	82JON 01						
1.88	0.12		XRF	86GIA 01						
1.9	0.2	11	ICPES	82JON 01			<	20	L	ICPES
1.95	0.02		RTNA	84BYR 02						82HAH 01
2.00	0.01	6	ICPES	82KUE 01						
2.0	0.1		ICPES	81KNA 01						
2.0	0.2	7	RTNA	80GAL 02		9.8		VV		85TAN 01
2.0	0.2		RTNA	78GIL 01						
2.0	0.2	2	FAA	84MIL 01						
2.0	0.3		ICPES	80SCH 08						
2.0	0.6	2	FAA	84MIL 01		11.5			GRAV	84NAR 01
2.02	0.08	1	ICPES	81WOL 02		11.5		D	GRAV	85NAR 03
2.035	0.007		IDMS	84BRO 03						
2.04			ICPES	81WOL 01						
2.06	0.03	6	ICPES	82KUE 01						
2.06	0.04	6	ICPES	82KUE 01						
2.08		1	ICPES	81WOL 02						

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Hg (ng/g)</u>										
<	60	L	XRF	86GIA 01		5.7	0.8	12	FAA	85CAR 02
1	0.3	7	RTNA	80GAL 02		6.7	1.2		AE+AF	82GOL 01
1	0.3		RTNA	78GIL 01		7.2	1		ICPES	85WHI 02
1.08	0.15		RTNA	84DEL 01		7.9	0.2	2	FAA	84MIL 01
1.22	0.16		RTNA	84BYR 02		8	0.4	11	ICPES	82JON 01
						8.2	0.3	11	ICPES	82JON 01
<u>I (ng/g)</u>										
1.97	0.28		RTNA	84BYR 02		8.2	1.8		XRF	86GIA 01
9	5		IENA	84GLA 11		8.3			ICPES	81WOL 01
						8.3	0.03		RTNA	84BYR 02
						8.3	0.2		ICPES	80SCH 08
<u>K (ug/g)</u>										
100	20		FAE	83MAR 04		8.6			ITNA	85GAU 04
1061	114	12	FAA	85CAR 02		8.6	0.4		ITNA	78GIL 01
1130	190		ICPES	85WHI 02		8.63	0.38	1	ICPES	81WOL 02
1220	130		XRF	86GIA 01		8.67	0.12	6	ICPES	82KUE 01
1240	30	2	FAA	84MIL 01		8.7		1	ICPES	81WOL 02
1260	30	2	FAA	84MIL 01		8.8	0.5		ICPES	83SCH 04
1300	50	11	ICPES	82JON 01		9.2	1.4		CPXRF	84BIS 01
1310	40	11	ICPES	82JON 01		9.6	3.1	12	FAA	85CAR 02
1320	10	6	ICPES	82KUE 01		9.7	0.4	2	FAA	84MIL 01
1320	10	6	ICPES	82KUE 01		9.9	0.5		ICPES	81KNA 01
1320	60	1	ICPES	81WOL 02						
1330	20	6	ICPES	82KUE 01		<u>Mo (ng/g)</u>				
1392	37		ITNA	78GIL 01		310			RTNA	85TIA 01
1500		1	ICPES	81WOL 02		380	30	6	ICPES	82KUE 01
1583	34		CPXRF	84BIS 01		390	90	11	ICPES	82JON 01
<u>La (ng/g)</u>										
1.8	0.3		RTNA	86TSU 01		400	40	6	ICPES	82KUE 01
						420	20		RTNA	84BYR 02
						420	40	6	ICPES	82JON 01
<u>Li (ng/g)</u>										
41.4	8		AA	85EVA 01		420	70	11	ICPES	85EVA 02
						430	63		COLOR	84MOK 02
						470	70		RTNA	
<u>Mg (ug/g)</u>										
370	20		ICPES	85WHI 02		2.2			VV	85TAN 01
373	11	2	FAA	84MIL 01		<u>Na (ug/g)</u>				
378	8	2	FAA	84MIL 01		<	20		ICPES	85WHI 02
397	14	1	ICPES	81WOL 02		9	0.8		FAE	83MAR 04
398	10	6	ICPES	82KUE 01		10.4	2.5		ITNA	78GIL 01
406	3	6	ICPES	82KUE 01		12			ITNA	84GLA 11
408		1	ICPES	81WOL 02		13	3		ITNA	85GAU 04
419	4	6	ICPES	82KUE 01						
420	10	11	ICPES	82JON 01						
429	9	11	ICPES	82JON 01						
466	5		SIMS	83RAM 01						

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ni (ng/g)</u>										
<	500	L	ICPES	82KUE 01		<	2	L	ICPES	82HAH 01
<	500	L	ICPES	82KUE 01		1.7	0.08		RTNA	84BYR 02
<	500	L	ICPES	82KUE 01		38	1		RTNA	78GIL 01
110	60		XRF	86GIA 01						
160	40	11	ICPES	82JON 01						
175			FAA	85LON 01						
200	40	11	ICPES	82JON 01			0.5		ITNA	84GLA 11
230			POL	83HOL 01			0.67		ITNA	86GAU 01
1500	100		CPXRF	84BIS 01						
<u>P (ug/g)</u>										
							0.7		FAA	81MEY 01
150			ICPES	85WHI 02			0.76	0.08	11	HAA
1350	20	6	ICPES	82KUE 01			0.82	0.08		ICPES
1370	10	6	ICPES	82KUE 01			0.87			HAA
1370	50	11	ICPES	82JON 01			0.87	0.06	H	ICPES
1390	50	1	ICPES	81WOL 02			0.901	0.051		HAA
1400	10	6	ICPES	82KUE 01			0.91	0.03	11	HAA
1420	30	11	ICPES	82JON 01			0.92	0.06		XRF
1450		1	ICPES	81WOL 02			0.94	0.08		HAA
							0.95	0.04		GC-MS
<u>Pb (ug/g)</u>										
							0.96	0.08		HAA
							0.98		11	HAA
<	0.02	L	ASV	82GAJ 01			1			CSV
<	0.1	L	ICPES	82JON 01			1	0.1		HAA
<	0.1	L	ICPES	82JON 01			1	0.1		HAA
<	3.8	L	ICPES	82KUE 01			1	0.1		HAA
<	3.8	L	ICPES	82KUE 01			1	0.1	11	XRF
<	3.8	L	ICPES	82KUE 01			1	0.2		HAA
<	100	L	XRF	86GIA 01			1	0.2		HAA
0.018	0.003		ASV	82SAT 02			1.03	0.04		81REA 01
							1.04	0.01		EXRF
<u>Rb (ug/g)</u>										
							1.05	0.09	7	RTNA
							1.05	0.09	7	RTNA
0.93	0.13		AA	85EVA 01			1.05	0.09	7	77GIL 03
0.94	0.06		XRF	86GIA 01			1.07		11	HAA
0.99	0.16		ITNA	78GIL 01			1.08			ICPES
							1.09	0.11	7	RTNA
<u>S (ug/g)</u>										
							1.1	0.02	11	XRF
							1.1	0.02		XRF
1623	32		CB	86GAU 01			1.1	0.09		ICPES
1780	60		WXRF	86BOW 01			1.1	0.1		HAA
1790		D	CB	85JAC 01			1.11	0.05		RTNA
1790	100	6	CB	84JAC 01			1.12	0.01	7	78GIL 01
1810		D	CB	85JAC 01			1.12	0.01		ITNA
1810	70	6	CB	84JAC 01			1.12	0.01		80GAL 02
1830	140		CB	86BOW 01			1.17	0.15		ITNA
1860	50		ICPES	85WHI 02			1.17	0.18	7	RTNA
1980	210		CB	84GLA 11			1.17	0.18	7	RTNA
										77GIL 03

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u><b>Sm (ng/g)</b></u>										
0.82	0.05		RTNA	86TSU 01		9.1	0.5		RTNA	84BYR 02
						9.9	0.5	2	FAA	84MIL 01
<u><b>Sn (ng/g)</b></u>										
<	20	L	ICPES	82HAH 01		10	0.1		ICPES	85WHI 02
						10.2			ICPES	81WOL 01
						10.3	0.4		XRF	86GIA 01
						10.5	0.7	1	ICPES	81WOL 02
<u><b>Sr (ug/g)</b></u>										
0.82	0.04		XRF	86GIA 01		10.5	0.7	11	ICPES	82JON 01
0.97	0.2		AA	85EVA 01		10.6	0.5	11	ICPES	82JON 01
1.02		1	ICPES	81WOL 02		10.6	0.7	11	ICPES	82JON 01
1.08	0.06	1	ICPES	81WOL 02		10.8		1	ICPES	81WOL 02
						10.88	0.56		ITNA	78GIL 01
<u><b>Tl (ng/g)</b></u>										
<	3	11	ASV	84LIE 01		10.9	0.1	6	ICPES	82KUE 01
2		11	ASV	84LIE 01		11	0.2	6	ICPES	82KUE 01
3		11	ASV	84LIE 01		11	0.4		ICPES	80SCH 08
3		11	ASV	84LIE 01		11.1	0.4	6	ICPES	82KUE 01
						11.3	1.1		ICPES	81KNA 01
						12.6	1.3	2	FAA	84MIL 01
						13.8	1.8		CPXRF	84BIS 01
<u><b>U (ng/g)</b></u>										
<	1		DNA	86GAU 01		14.8	4.2	12	FAA	85CAR 02
0.95	0.24	35	DNA	80GLA 04						
<u><b>V (ng/g)</b></u>										
<	50	L	ICPES	82JON 01						
11.2	1.2		RTNA	84BYR 02						
11.3			COLOR	85EVA 02						

TABLE 1568-1: COMPILED DATA FOR NBS SRM 1568 RICE FLOUR (revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS		RANGE		NAA		ICPES		OTHER METHODS	
		Mean ± SD	(n)	Median	(1)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean (n) Method	Mean (n) Method
Al	ug/g	---		115	(1)	---		---		---		115 (1) SIMS	---
As	ng/g	410 ± 50	(24)	410	370 - 464	409 ± 31	(9)	420 ± 40	(3)	415 ± 17	(11) AA	420 (1) XRF	
B	ug/g	---	< 1	---	---	---		---		< 1	TCGS	---	
Bi	ng/g	---	< 8	---	---	---		< 8		---		---	
Br	ug/g	1	1.11 ± 0.17 (3)	1.19	0.92 - 1.23	1.08	(2)	144 ± 15	(5)	1.19 (1) XRF		---	
Ca	ug/g	140 ± 20	148 ± 8 (14)	146	135 - 162	---		---		135 (1) FAE	158 (1) XRF		
Ca	ug/g	---	---	---	---	---		---		147 ± 7 (8) AA	---	---	
Cd	ng/g	29 ± 4	27 ± 4 (7)	28	20 - 30	29.4	(2)	28	(1)	22.5 (2) ASV	27 (1) IDMS		
Cd	ng/g	---	---	---	---	---		---		30 (1) AA	---	---	
Cl	ug/g	---	238 ± 13 (4)	238	220 - 248	238 ± 13	(4)	---		---		---	
Co	ng/g	20 ± 10	19 ± 2 (3)	18	16.8 - 21	19.5	(2)	---		16.8 (1) AA	---	---	
Cr	ng/g	---	240 ± 180 (3)	200	80 - 430	---		140	(2)	430 (1) FAE	---	---	
Cs	ng/g	---	< 200	---	---	< 200		---		---		---	
Cu	ug/g	2.2 ± 0.3	2.08 ± 0.16 (18)	2.1	1.86 - 2.4	2.09 ± 0.16 (4)		2.04 ± 0.12 (6)		2.13 (1) IDMS	2.3 (1) FAE		
Cu	ug/g	---	---	---	---	---		---		1.91 (2) HPLC	2.21 (1) XRF		
Cu	ug/g	---	---	---	---	---		---		2.2 ± 0.2 (3) AA	---	---	
F	ng/g	---	190 (2)	---	180 - 200	---		---		190 (2) ISE	---	---	
Fe	ug/g	8.7 ± 0.6	8.0 ± 1.2 (14)	7.8	5.6 - 9.7	8.85	(1)	8.2 ± 0.9	(8)	8.05 (2) FAE	9.1 (1) XRF		
Fe	ug/g	---	---	---	---	---		---		6.3 (1) AA	---	---	
Ge	ng/g	---	< 20	---	---	---		---		< 20	---	---	
H2O-	%	---	11 (2)	---	---	---		---		12 (1) GRAV	---	---	
Hg	ng/g	6.0 ± 0.7	6.3 ± 0.4 (5)	6.4	5.6 - 6.8	6.5 ± 0.2 (4)		---		5.6 (1) AA	---	---	
I	ng/g	---	11.2 ± 0.4 (5)	11	10.9 - 12	11.2 ± 0.4 (5)		---		---		---	
K	ug/g	1120 ± 20	1050 ± 90 (9)	1080	900 - 1150	1125	(1)	1060 ± 100	(4)	900 (1) FAE	1360 (1) XRF		
K	ug/g	---	---	---	---	---		---		1060 ± 60 (3) AA	---	---	
Mg	ug/g	---	497 ± 30 (5)	510	450 - 527	---		490 ± 30 (4)		527 (1) SIMS	---	---	
Mn	ug/g	20.1 ± 0.4	20.5 ± 1.0 (16)	20.1	19.1 - 22.4	21	(2)	19.9 ± 0.4 (8)		20.9 ± 1.2 (4) AA	22.1 (1) XRF		
Mo	ug/g	1.6	1.61 ± 0.04 (5)	1.6	1.59 - 1.68	1.64	(2)	1.59 ± 0.01 (3)		---	---	---	
N	%	---	1.5 (1)	---	---	---		---		6 (1) FAE	---	---	
Na	ug/g	6.0 ± 1.5	7.3 ± 1.8 (4)	6.4	6 - 10	7.8 ± 2.0 (3)		---		6 (1) FAE	---	---	
Ni	ng/g	160	164 ± 12 (4)	160	150 - 180	---		155 (2)		180 (1) XRF	165 (1) AA		

TABLE 1568-1: COMPILED DATA FOR NBS SRM 1568 RICE FLOUR (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS		RANGE	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	OTHER METHODS Mean (n) Method
			Mean ± SD (n)	Median				
P	ug/g	---	1630 ± 40 (4)	1600	1600 - 1680	---	1630 ± 40 (4)	---
Pb	ng/g	45 ± 10	32 (2)	---	30 - 35	---	---	32.5 (2) ASV
Rb	ug/g	7	8.0 ± 0.6 (3)	8.2	7.27 - 8.4	7.27 (1)	---	8.3 (2) XRF
S	ug/g	---	1350 ± 60 (6)	1360	1256 - 1400	---	1400 (1)	1350 ± 60 (4) CB
Sb	ng/g	---	7.45 (2)	---	5 - 9.9	7.45 (2)	---	---
Sc	ng/g	---	0.19 (2)	---	0.13 - 0.25	0.19 (2)	---	---
Se	ng/g	400 ± 100	380 ± 50	380	280 - 480	440 ± 20 (8)	360 ± 25 (3)	396 ± 9 (5) XRF
Se	ng/g	---	---	---	---	---	350 ± 40 (15)	390 (1) GC-MS
Sn	ng/g	---	< 20	---	---	---	< 20	---
Sr	ng/g	---	190 (1)	---	---	---	190 (1) XRF	---
Te	ng/g	< 2	---	---	---	---	---	---
Tl	ng/g	---	< 2	---	---	---	< 2	ASV < 2 AA
U	ng/g	---	0.89 (1)	---	---	0.89 (1)	---	---
V	ng/g	---	6.2 (1)	---	---	6.2 (1)	---	---
Zn	ug/g	19.4 ± 1.0	19.7 ± 0.6 (16)	19.8	18.7 - 21.3	20 (2)	19.7 ± 0.4 (9)	19.5 (2) HPLC 21.9 (1) XRF
Zn	ug/g	---	---	---	---	---	19.3 (2) AA	---

COMPOUND	CAS #	UNITS	NBS	CONSENSUS Mean (n)
Total Folates	---	ug/g	---	0.21 (1)
Total Pantthenates	---	ug/g	---	3.8 (1)
Thiamine	---	ug/g	---	1.4 (1)
Protein	---	%	---	8.4 (1)
Nicotinic Acid	59676	ug/g	---	15.7 (1)
Vitamin B-6	65236	ug/g	---	1.4 (1)
Riboflavin	83885	ug/g	---	0.33 (1)

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Total Folates (ug/g)</u>					<u>As (ng/g) cont.</u>				
0.21		VV	85TAN 01		410		HAA	84IKE 01	
<u>Total Pantothenates (ug/g)</u>					410	20	7	RTNA	80GAL 02
3.8		VV	85TAN 01		410	20	11	HAA	81RAP 01
<u>Thiamine (ug/g)</u>					410	70	11	HAA	81RAP 01
1.4		VV	85TAN 01		410	70	HAA	81KNA 01	
<u>Protein (%)</u>					420	20	HAA	84NAR 01	
8.4		VV	85TAN 01		420	90	XRF	86GIA 01	
<u>Nicotinic acid (ug/g)</u>					436	18	HAA	82TAM 01	
15.7		VV	85TAN 01		440		HAA	83KUM 01	
<u>Vitamin B-6 (ug/g)</u>					440	50	H	ICPES	82HAA 01
1.4		VV	85TAN 01		440	80	HAA	85NAR 03	
<u>Riboflavin (ug/g)</u>					452	70	ICPES	81WOL 01	
0.33		VV	85TAN 01		460	70	IENA	82GLA 02	
<u>Al (ug/g)</u>					464	11	RTNA	84BYR 02	
<u>B (ug/g)</u>					<	1	L	TCGS	82GLA 02
<u>Bi (ng/g)</u>					<	8	L	ICPES	82HAA 01
<u>Br (ug/g)</u>					0.92	0.12	IENA	84GLA 11	
					1.19	0.17	XRF	86GIA 01	
					1.23	0.08	ITNA	78GIL 01	
<u>Ca (ug/g)</u>					115	SIMS	83RAM 01		
<u>As (ng/g)</u>					95	4	CPXRF	84BIS 01	
41	2	RTNA	84DEL 01		120	30	ICPES	85WHI 02	
90	10	COLOR	77BUR 01		135	4	FAE	83MAR 04	
320	40	11	HAA	82JON 01	136	5	12	FAA	85CAR 02
370		ICPES	84MIA 01		142	3		ICPES	81WOL 01
380	20	7	RTNA	77GIL 03	144		AA	81YAS 01	
387		RTNA	85TIA 01		145		AA	81YAS 01	
390	30		HAA	85YAM 01	146		AA	81YAS 01	
390	70	7	RTNA	77GIL 03	146		AA	81YAS 01	
390	80	7	RTNA	77GIL 03	148	3	11	ICPES	82JON 01
400	10		RTNA	78GIL 01	148	5	11	ICPES	82JON 01
400	10		FAA	84XIA 01	149		AA	81YAS 01	
400	10	7	RTNA	80GAL 02	151		AA	81YAS 01	
400	10	11	HAA	81RAP 01	158	14	XRF	86GIA 01	
					160	10	ICPES	85LYO 01	
					162	10	12	FAA	85CAR 02

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Cd (ng/g)</u>					<u>Cu (ug/g) cont.</u>				
20			ASV	82GAJ 01	2.2	0.2	2	FAA	84MIL 01
25	2		ASV	82SAT 02	2.2	0.3		ICPES	83SCH 04
27	2		IDMS	84BRO 03	2.21	0.22		XRF	86GIA 01
28	2		ICPES	83SCH 04	2.3	0.2		FAE	83MAR 04
29	9	7	RTNA	80GAL 02	2.4	0.1	2	FAA	84MIL 01
29.8	1.4		RTNA	84BYR 02	2.8	0.3	12	FAA	85CAR 02
30	10		FAA	80SCH 08					
40	20	11	ICPES	82JON 01	<u>F (ng/g)</u>				
60	30	11	ICPES	82JON 01	180	40		ISE	83KNA 01
<u>Cl (ug/g)</u>					200			ISE	84GLA 02
220			ITNA	86GAU 01	<u>Fe (ug/g)</u>				
238			ITNA	84GLA 11	5.6	0.9	2	FAA	84MIL 01
246	11		IENA	84GLA 11	6.4	0.6	12	FAE	83MAR 04
248			ITNA	85GAU 04	7	0.3	2	FAA	84MIL 01
<u>Co (ng/g)</u>					7.1	0.4	11	ICPES	82JON 01
					7.3	0.4	11	ICPES	82JON 01
16.8	3.8		FAA	84BOR 01	7.6	0.4	11	ICPES	82JON 01
18	2		ITNA	78GIL 01	7.8	0.4	11	ICPES	82JON 01
21	10		RTNA	84BYR 02	8	1		ICPES	80SCH 08
					8.85	0.94		ITNA	78GIL 01
<u>Cr (ng/g)</u>					9.06	1		ICPES	81WOL 01
					9.1	0.9		ICPES	85LYO 01
<	400	L	XRF	86GIA 01	9.1	1.2		XRF	86GIA 01
80	80	11	ICPES	82JON 01	9.4	0.3		ICPES	81KNA 01
200	200	11	ICPES	82JON 01	9.7	2.7	12	FAE	83MAR 04
430	70		FAE	83MAR 04	11.2	0.7		CPXRF	84BIS 01
<u>Cs (ng/g)</u>					<u>Ge (ng/g)</u>				
<	200	L	ITNA	82GLA 02	<	20	L	ICPES	82MAH 01
<u>Cu (ug/g)</u>					<u>H2O (%)</u>				
1.76	0.1		CPXRF	84BIS 01	9.9			VV	85TAN 01
1.86	0.03		RTNA	84BYR 02					
1.87	0.11	11	HPLC	85ICH 01	<u>H2O- (%)</u>				
1.9	0.2	12	FAA	85CAR 02	12		D	GRAV	85NAR 03
1.9	0.2	11	ICPES	82JON 01	12			GRAV	84NAR 01
1.95	0.09	11	HPLC	85ICH 01					
2.01	0.01		ICPES	81WOL 01	<u>Hg (ng/g)</u>				
2.1			RTNA	85TIA 01	<	80	L	XRF	86GIA 01
2.1	0.1		ICPES	81KNA 01					
2.1	0.2		ICPES	80SCH 08	5.6	0.5		CVAA	81KNA 01
2.13	0.06		IDMS	84BRO 03	6.4	0.5		RTNA	84DEL 01
2.2	0.13	7	RTNA	80GAL 02	6.4	1		RTNA	78GIL 01
2.2	0.13		RTNA	78GIL 01	6.4	1	7	RTNA	80GAL 02
					6.8	1.05		RTNA	84BYR 02

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>I (ng/g)</u>										
10.9	1.2		RTNA	84BYR 02		1.59	0.07	11	ICPES	82JON 01
11	1		RTNA	83ALL 01		1.59	0.09	11	ICPES	82JON 01
11	6		IENA	84GLA 11		1.6	0.13		ICPES	81WOL 01
11.1	1	35	RTNA	81ALL 01		1.61			RTNA	85TIA 01
12	1	34	RTNA	81ALL 01		1.68	0.18		RTNA	84MOK 02
<u>K (ug/g)</u>										
900	100		FAE	83MAR 04		1.5			VV	85TAN 01
965	11		ICPES	81WOL 01						
970	160		ICPES	85WHI 02						
995	48	12	FAA	85CAR 02						
1080	20	2	FAA	84MIL 01		<	20		ICPES	85WHI 02
1100	30	2	FAA	84MIL 01		6	1.6		FAE	83MAR 04
1125	16		ITNA	78GIL 01		6.4			ITNA	84GLA 11
1140	30	11	ICPES	82JON 01		6.9	0.4		ITNA	78GIL 01
1150	80	11	ICPES	82JON 01		10			ITNA	85GAU 04
1239	28		CPXRF	84BIS 01						
1360	160		XRF	86GIA 01						
<u>Mg (ug/g)</u>										
						150	20	11	ICPES	82JON 01
						160	30	11	ICPES	82JON 01
450	20		ICPES	85WHI 02		165			FAA	85LON 01
490	30		ICPES	85LYO 01		180	60		XRF	86GIA 01
510	10	11	ICPES	82JON 01		2000	100		CPXRF	84BIS 01
510	20	11	ICPES	82JON 01						
527	6		SIMS	83RAM 01						
<u>P (ug/g)</u>										
						1420	2		ICPES	84PRI 01
						1600	60	11	ICPES	82JON 01
19.1	0.9	11	ICPES	82JON 01		1600	100		ICPES	85LYO 01
19.5	1	2	FAA	84MIL 01		1630	30	11	ICPES	82JON 01
19.7	0.4		ICPES	83SCH 04		1680	40		ICPES	85WHI 02
19.8	1.5		ICPES	85LYO 01						
19.9	0.4		ICPES	81WOL 01						
19.95	0.69		ITNA	78GIL 01						
20	3		ICPES	80SCH 08		<	100	L	ICPES	82JON 01
20.1	0.3	11	ICPES	82JON 01		<	100	L	ICPES	82JON 01
20.2	0.5	11	ICPES	82JON 01		30			ASV	82GAJ 01
20.7	1.4		ICPES	85WHI 02		35	4		ASV	82SAT 02
20.8	0.4	12	FAA	85CAR 02		100	90		XRF	86GIA 01
21	0.4	12	FAA	85CAR 02						
21.4	1.4		ICPES	81KNA 01						
22.1	0.7		RTNA	84BYR 02						
22.1	2.8		XRF	86GIA 01		7.27	0.21		ITNA	78GIL 01
22.4	0.9	2	FAA	84MIL 01		8.2	0.8		CPXRF	84BIS 01
25.8	1.1		CPXRF	84BIS 01		8.4	0.9		XRF	86GIA 01

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>S (ug/g)</u>										
1059	5		ICPES	84PRI 01		420	30		ITNA	78GIL 01
1256	58		CB	86GAU 01		420	30	7	RTNA	77GIL 03
1320	30		WXRF	86BOW 01		430	40		RTNA	84DEL 01
1360	50		CB	86BOW 01		450	30		RTNA	78GIL 01
1380		D	CB	85JAC 01		460	80	7	RTNA	77GIL 03
1380	60	6	CB	84JAC 01		460	80	7	RTNA	80GAL 02
1400			ICPES	85WHI 02		480	70	7	RTNA	80GAL 02
1400		D	CB	85JAC 01		480	70		HAA	82TAM 01
1400	30	6	CB	84JAC 01						
1520	70		CB	84GLA 11						
<u>Sb (ng/g)</u>										
<	2	L	ICPES	82HAH 01		<	20	L	ICPES	82HAH 01
5	1		RTNA	78GIL 01						
9.9	0.3		RTNA	84BYR 02						
<u>Sc (ng/g)</u>										
0.13	0.17		ITNA	86GAU 01		<	2	11	ASV	84LIE 01
0.25			ITNA	84GLA 11		<	2	11	ASV	84LIE 01
<u>Se (ng/g)</u>										
280	30	11	HAA	82JON 01		<	2	11	ASV	84LIE 01
280	55		FAA	81MEY 01		0.89	0.22	35	DNA	86GAU 01
300		11	HAA	85PIW 01						80GLA 04
315	14		HAA	81HAH 01						
320	40	11	HAA	82JON 01						
320	50		HAA	81MEY 01						
331	29		ICPES	81WOL 01						
338	3	7	RTNA	77GIL 03						
350		11	HAA	85PIW 01						
370	30		HAA	80RAP 02						
370	60	H	ICPES	82HAH 01						
380			ICPES	84MIA 01						
380	10		HAA	81HAN 01		17.3	7.2	12	FAA	85CAR 02
380	20		HAA	83KOL 01		18.7	4.6	2	FAA	84MIL 01
380	40		HAA	84NAR 01		19.1	0.4		RTNA	84BYR 02
380	40		XRF	86GIA 01		19.1	2.4		ICPES	85LYO 01
380	40		HAA	85YAM 01		19.3	0.7	11	ICPES	82JON 01
380	50		HAA	80VIJ 01		19.4	0.4		ICPES	81WOL 01
390	20		GC-MS	81REA 02		19.5	0.5	11	HPLC	85ICH 01
390	70		HAA	81REA 01		19.5	0.6	11	HPLC	85ICH 01
400	8		EXRF	80RAP 03		19.6	0.4		ICPES	80SCH 08
400	20	11	XRF	80RAP 01		19.8	0.8	11	ICPES	82JON 01
400	20		XRF	81KNA 01		19.9	0.4		ICPES	83SCH 04
400	100		HAA	85NAR 03		19.9	1.4	2	FAA	84MIL 01
400	100	11	XRF	80RAP 01		19.97	0.69		ITNA	78GIL 01
420	30		ITNA	80GAL 02		20	1	11	ICPES	82JON 01

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Zn (ug/g) cont.</u>					
20.2	0.8	11	ICPES	82JON 01	
20.4	0.9		ICPES	85WHI 02	
21.3	1.3		ICPES	81KNA 01	
21.9	1.8		XRF	86GIA 01	
26.3	3.1		CPXRF	84BIS 01	

TABLE 1569-1: COMPILED DATA FOR NBS SRM 1569 BREWER'S YEAST (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		NAA		ICPES		OTHER METHODS		
		Mean ± SD	n	Mean ± SD	(n)	Median		Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method
Al	ug/g	---		2150	(2)	---	2000 - 2300	2300	(1)	2000	(1)	---	---	545	(2)	AA
As	ng/g	---		590 ± 70	(3)	560	530 - 670	670	(1)	---	---	6.2	(1)	TGGS	---	
B	ug/g	---		6.2	(1)	---	---	---	---	---	---	22	(1)	FAAC	---	
Be	ng/g	---		22	(1)	---	---	---	---	---	---	---	---	---	---	
Br	ug/g	---		3.6 ± 3.0	(3)	3.4	0.65 - 6.7	3.6 ± 3.0	(3)	---	---	---	---	---	---	
Ca	ug/g	---		2370 ± 100	(4)	2290	2270 - 2490	---	2370 ± 100	(4)	---	---	---	---	---	
Cd	ng/g	---		170 ± 90	(4)	120	80 - 290	---	170 ± 90	(4)	---	---	---	---	---	
Ce	ug/g	---		2.3	(1)	---	---	2.3	(1)	---	---	---	---	---	---	
Cl	ug/g	---		485	(2)	---	460 - 510	485	(2)	---	---	---	---	---	---	
Co	ng/g	---		280	(2)	---	260 - 300	280	(2)	---	---	---	---	---	---	
Cr	ug/g	2.12 ± 0.05		2.00 ± 0.26	(16)	2.08	1.2 - 2.17	2.05 ± 0.17	(11)	1.2	(1)	1.7 ± 0.6	(3)	AA	---	
Cr	ug/g	---		---		---	---	---	---	---	---	2.08	(1)	IDMS	---	
Cr	ug/g	---		---		---	---	---	---	---	---	2	(1)	NM	---	
Cs	ng/g	---		< 200		---	---	< 200		---	---	---	---	---	---	
Cu	ug/g	---		16 ± 3	(5)	17.7	11 - 18.4	11	(1)	16.8 ± 2.5	(4)	---	---	---	---	
Eu	ng/g	---		20	(1)	---	---	20	(1)	---	---	---	---	---	---	
F	ug/g	---		14.5	(2)	---	14 - 15	---	---	---	---	14.5	(2)	ISE	---	
Fe	ug/g	---		660 ± 50	(4)	660	590 - 707	648	(2)	676	(2)	---	---	---	---	
Ge	ug/g	---		7.1	(1)	---	---	7.1	(1)	---	---	---	---	---	---	
Hf	ng/g	---		130	(1)	---	---	130	(1)	---	---	---	---	---	---	
Hg	ng/g	---		22	(1)	---	---	---	---	---	---	22	(1)	AA	---	
I	ng/g	---		46	(2)	---	32 - 60	46	(2)	---	---	---	---	---	---	
K	%	1.52 ± 0.11	(6)	1.45		1.4 - 1.71	1.4 - 1.71	1.63	(2)	1.47 ± 0.08	(4)	---	---	---	---	

TABLE 1569-1: COMPILED DATA FOR NBS SRM 1569 BREWER'S YEAST (cont.)

ELEMENT	UNITS	NBS		CONSENSUS		RANGE		NAA		ICPES		OTHER METHODS		
		Mean	SD	Mean	SD	(n)		Mean	SD	(n)	Mean	SD	(n)	Method
Li	ng/g	---	---	440	(1)	---	---	---	---	---	---	440	(1)	AAC
Mg	ug/g	---	---	1850 ± 100	(5)	1870	1730 - 1980	1780	(1)	1870 ± 100	(4)	---	---	---
Mn	ug/g	---	---	10.0 ± 0.7	(5)	10	9.1 - 10.9	10	(1)	10.0 ± 0.8	(4)	---	---	---
Mo	ug/g	---	---	3.6 ± 0.3	(4)	3.4	3.3 - 3.9	---	---	3.6 ± 0.3	(4)	---	---	---
Na	ug/g	---	---	610 ± 90	(3)	660	510 - 670	610 ± 90	(3)	---	---	---	---	---
Ni	ug/g	---	---	5.3 ± 0.7	(4)	4.8	4.6 - 6	---	---	5.3 ± 0.7	(4)	---	---	---
P	%	---	---	1.04 ± 0.03	(4)	1.02	1.0 - 1.08	---	---	1.04 ± 0.03	(4)	---	---	---
Pb	ng/g	---	---	350	(2)	---	200 - 500	---	---	350	(2)	---	---	---
Rb	ug/g	---	---	16	(1)	---	---	16	(1)	---	---	---	---	---
S	ug/g	---	---	4140 ± 40	(3)	4140	4100 - 4170	---	---	---	---	4140	(1)	XRF
S	ug/g	---	---	---	---	---	---	---	---	---	---	4135	(2)	CB
Sb	ng/g	---	---	152	(2)	---	75 - 230	152	(2)	---	---	---	---	---
Sc	ng/g	---	---	187 ± 21	(5)	180	170 - 220	187 ± 21	(5)	---	---	---	1	(2) AA
Se	ug/g	---	---	0.97 ± 0.04	(3)	0.98	0.92 - 1.01	0.92	(1)	---	---	---	---	---
Sr	ug/g	---	---	10.3	(1)	---	---	10.3	(1)	---	---	---	---	---
Th	ug/g	---	---	3.7	(1)	---	---	3.7	(1)	---	---	---	---	---
Ti	ug/g	---	---	38	(1)	---	---	38	(1)	---	---	---	---	---
U	ng/g	---	---	470 ± 16	(8)	470	441 - 490	474 ± 11	(7)	---	---	441	(1)	IDMS
U-235/238 ratio	---	---	0.0073	(1)	---	---	---	---	---	0.0073	(1)	0.0073	(1)	IDMS
V	ug/g	---	---	4.25	(2)	---	4.1 - 4.4	4.1	(1)	4.4	(1)	---	---	---
Zn	ug/g	---	---	65 ± 3	(9)	65	59 - 70	70	(1)	64.5 ± 3.1	(8)	---	---	---

TABLE 1569-2: INDIVIDUAL DATA FOR NBS SRM 1569 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Al (ug/g)</u>						<u>Cr (ug/g)</u>				
2000	56	11	ICPES	82JON 01		0.078	0.026		FAA	74WOL 01
2300	10		ITNA	78BER 01		0.7	0.1	11	ICPES	82JON 01
						0.87			FAA	80CHA 01
<u>As (ng/g)</u>						1.04	0.04	7	FAA	80CHA 01
530	80	11	HAA	82JON 01		1.12	0.08		RTNA	78GOE 01
560	30	11	HAA	82JON 01		1.2	0.6	11	ICPES	82JON 01
670	70		IENA	82GLA 02		1.558	0.015	11	RTNA	78MCC 01
						2.00	0.02		NM	80SHI 01
						2.02	0.1		FAA	83CAR 02
<u>B (ug/g)</u>						2.043		11	NAA	79VER 01
6.2			TCGS	82GLA 02		2.074	0.012	11	RTNA	78MCC 01
<u>Be (ng/g)</u>						2.08	0.09		IDMS	79VEI 01
22	6		FAAC	86GAU 01		2.082	0.013	24	ITNA	78MCC 01
						2.094		11	NAA	79VER 01
						2.096	0.02	24	ITNA	78MCC 01
<u>Br (ug/g)</u>						2.1	0.5		ITNA	79KOB 03
0.65	0.03		ITNA	78BER 01		2.119	0.025	24	ITNA	78MCC 01
3.4			IENA	84GLA 11		2.12	0.08		ITNA	78BER 01
6.7	0.4		ITNA	79KOB 03		2.13	0.12	7	FAA	80CHA 01
<u>Ca (ug/g)</u>						2.13	0.13		RTNA	79TJI 01
2270	70	11	ICPES	82JON 01		2.17	0.11		ITNA	82GLA 02
2290	10	11	ICPES	82JON 01		<u>Cs (ng/g)</u>				
2420	40	11	ICPES	82JON 01		<	200	L	ITNA	82GLA 02
2490	30	11	ICPES	82JON 01		<u>Cu (ug/g)</u>				
<u>Cd (ng/g)</u>						11	2		ITNA	78BER 01
80	40	11	ICPES	82JON 01		13	1	11	ICPES	82JON 01
120	70	11	ICPES	82JON 01		17.7	0.2	11	ICPES	82JON 01
180	70	11	ICPES	82JON 01		18.1	0.7	11	ICPES	82JON 01
290	60	11	ICPES	82JON 01		18.4	0.3	11	ICPES	82JON 01
<u>Ce (ug/g)</u>						<u>Eu (ng/g)</u>				
2.3	0.1		ITNA	78BER 01		20	10		ITNA	79KOB 03
<u>Cl (ug/g)</u>						<u>F (ug/g)</u>				
460	30		ITNA	78BER 01		14	2		ISE	83KNA 01
510			ITNA	84GLA 11		15	2		ISE	84GLA 02
900			IENA	84GLA 11		<u>Fe (ug/g)</u>				
<u>Co (ng/g)</u>						257	34	11	ICPES	82JON 01
260	20		ITNA	78BER 01		499	15	11	ICPES	82JON 01
300	60		ITNA	79KOB 03		590	24		ITNA	79KOB 03
						660	15	11	ICPES	82JON 01
						693	25	11	ICPES	82JON 01
						707	16		ITNA	78BER 01

TABLE 1569-2: INDIVIDUAL DATA FOR NBS SRM 1569 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ga (ug/g)</u>						<u>Na (ug/g)</u>				
7.1	0.5		ITNA	78BER 01		510	30		ITNA	78BER 01
<u>Hf (ng/g)</u>						660			ITNA	84GLA 11
130	10		ITNA	78BER 01		670	42		ITNA	79KOB 03
<u>Hg (ng/g)</u>						<u>Ni (ug/g)</u>				
22			CVAA	82GLA 02		4.6	0.3	11	ICPES	82JON 01
<u>I (ng/g)</u>						4.8	0.1	11	ICPES	82JON 01
32			IENA	84GLA 11		5.9	0.2	11	ICPES	82JON 01
60	20		IENA	82SAT 01		6	0.2	11	ICPES	82JON 01
<u>K (%)</u>						<u>P (%)</u>				
1.4	0.1	11	ICPES	82JON 01		1	0.04	11	ICPES	82JON 01
1.45	0.007	11	ICPES	82JON 01		1.02	0.03	11	ICPES	82JON 01
1.45	0.05	11	ICPES	82JON 01		1.04	0.05	11	ICPES	82JON 01
1.55	0.05		ITNA	78BER 01		1.08	0.04	11	ICPES	82JON 01
1.59	0.04	11	ICPES	82JON 01		<u>Pb (ng/g)</u>				
1.71	0.12		ITNA	79KOB 03		200	200	11	ICPES	82JON 01
<u>Li (ng/g)</u>						500	500	11	ICPES	82JON 01
440	20		AAC	85GAU 04		<u>Rb (ug/g)</u>				
<u>Mg (ug/g)</u>						16	1		ITNA	78BER 01
1730	70	11	ICPES	82JON 01		<u>S (ug/g)</u>				
1780	100		ITNA	78BER 01		4100	90		CB	86BOW 01
1870	50	11	ICPES	82JON 01		4140	120		WXRF	86BOW 01
1900	60	11	ICPES	82JON 01		4170	120		CB	84GLA 11
1980	60	11	ICPES	82JON 01		<u>Sb (ng/g)</u>				
<u>Mn (ug/g)</u>						75	5		ITNA	78BER 01
7	0.8		ITNA	78BER 01		230	50		ITNA	79KOB 03
9.1	0.6	11	ICPES	82JON 01		<u>Sc (ng/g)</u>				
9.6	0.6	11	ICPES	82JON 01		170	9		ITNA	86GAU 01
10	1.5		ITNA	79KOB 03		170	14		ITNA	84GLA 11
10.4	0.8	11	ICPES	82JON 01		180	10		ITNA	78BER 01
10.9	0.7	11	ICPES	82JON 01		196			ITNA	85GAU 04
<u>Mo (ug/g)</u>						220	30		ITNA	79KOB 03
<u>Se (ug/g)</u>						<u>Se (ug/g)</u>				
3.3	0.3	11	ICPES	82JON 01		0.92	0.09		ITNA	78BER 01
3.4	0.1	11	ICPES	82JON 01		0.98	0.05	11	HAA	82JON 01
3.8	0.2	11	ICPES	82JON 01		1.01	0.06	11	HAA	82JON 01

TABLE 1569-2: INDIVIDUAL DATA FOR NBS SRM 1569 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sr (ug/g)</u>										
10.3			IENA	85GAU 04		7.26	0.07	28	IDMS	82CUR 01
<u>Th (ug/g)</u>										
3.7	0.2		ITNA	78BER 01		1.46	0.05	11	ICPES	82JON 01
<u>Ti (ug/g)</u>										
38	2		ITNA	78BER 01		4.1	0.1	ITNA	78BER 01	
<u>V (ug/g)</u>										
<u>Zn (ug/g)</u>										
<u>U (ng/g)</u>										
441	4		IDMS	82CUR 01		30	4.3		ITNA	79KOB 03
460	20	35	DNA	81GLA 03		59	6	11	ICPES	82JON 01
470	20		DNA	84GLA 02		63	2	11	ICPES	82JON 01
470	20		DNA	82GLA 02		64	4	11	ICPES	82JON 01
470	20	35	DNA	80GLA 04		64	5	11	ICPES	82JON 01
470	20	35	DNA	81GLA 04		65	2	11	ICPES	82JON 01
490	20		ITNA	78BER 01		65	2	11	ICPES	82JON 01
490	30		DNA	84GLA 11		66	2	11	ICPES	82JON 01
						70	2		ITNA	78BER 01
						70	4	11	ICPES	82JON 01

TABLE 1570-1: COMPILED DATA FOR NBS SRM 1570 SPINACH (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA	Mean ± SD (n)	NAA	Mean ± SD (n)	ICPES	OTHER METHODS		
			Mean ± SD	n								Mean ± SD (n)	Mean ± SD (n)	Mean (n) Method
Ag	ng/g	---	65	(2)	---	65 - 65	65	(1)	65	(1)	---	---	---	---
Al	ug/g	870 ± 50	810 ± 90	(13)	824	609 - 909	861	(1)	856 ± 36	(6)	700 ± 150	(8)	---	---
As	ng/g	150 ± 50	153 ± 20	(18)	150	114 - 180	158 ± 13	(8)	147 ± 23	(7)	170	(1)	170	(1) COLOR
Au	ng/g	---	1.2	(2)	---	0.4 - 2	---	---	1.2	(2)	---	---	---	---
B	ug/g	30	27.7 ± 0.6	(5)	27.6	27 - 28.5	---	---	27.6 ± 0.7	(4)	---	28	(1)	TCGS
Ba	ug/g	---	14.9 ± 2.5	(3)	13.9	13.1 - 17.8	---	---	13.1	(1)	15.8	(2)	---	---
Be	ng/g	---	16	(1)	---	---	---	---	16	(1)	---	---	---	---
Bi	ng/g	---	< 8	---	---	---	---	---	< 8	---	---	---	---	---
Br	ug/g	54	48 ± 4	(14)	47	42.4 - 55.3	---	48 ± 4	(13)	---	51.1	(1)	XRF	---
C	%	---	40.76	(22)	---	40.7 - 40.82	---	---	---	---	40.76	(2)	CB	---
Ca	%	1.35 ± 0.03	1.33 ± 0.08	(21)	1.347	1.19 - 1.49	1.21	(1)	1.44 ± 0.06	(3)	1.32 ± 0.06	(14)	1.35	(1) NM
Cd	ug/g	1.5	1.43 ± 0.14	(30)	1.42	1.2 - 1.7	1.41 ± 0.16	(10)	1.51 ± 0.12	(5)	1.5 ± 0.2	(12)	1.25 ± 0.06	(3) ASV
Ce	ng/g	---	456	(2)	---	240 - 671	---	456	(2)	---	---	---	---	---
Cl	ug/g	---	6600 ± 410	(6)	6500	6000 - 7000	---	6620 ± 450	(5)	---	6500	(1)	XRF	---
Co	ug/g	1.5	1.56 ± 0.12	(12)	1.5	1.41 - 1.76	1.51 ± 0.12	(3)	1.58 ± 0.12	(8)	1.5	(1)	---	---
Cr	ug/g	4.6 ± 0.3	4.3 ± 0.5	(25)	4.4	3.33 - 5.2	4.6 ± 0.6	(7)	4.6 ± 0.4	(7)	3.9 ± 0.5	(9)	5.2	(1) AE±AF
Cr	ug/g	---	---	---	---	---	---	---	---	---	3.9	(1)	POL	6.0 (1) PAA
Cs	ng/g	---	61 ± 9	(4)	63	48 - 68	---	61 ± 9	(4)	---	---	---	---	---
Cu	ug/g	12 ± 2	11.8 ± 0.7	(45)	11.8	10.2 - 13.2	12.2 ± 0.6	(10)	11.6 ± 0.4	(8)	11.6 ± 0.8	(17)	11.6	(2) XRF
Cu	ug/g	---	---	---	---	---	---	---	---	---	10.8	(1)	ASV	---
Cu	ug/g	---	---	---	---	---	---	---	---	---	12.1	(2)	COLOR	13 (1) DCPES
Cu	ug/g	---	---	---	---	---	---	---	---	---	11.5	(1)	FAE	11.5 (1) SSMS
Eu	ng/g	20	15 ± 4	(3)	14	11 - 20	---	15 ± 4	(3)	---	---	---	---	---
F	ug/g	---	4.35	(2)	---	4.3 - 4.4	---	---	---	---	4.35	(2)	ISE	---
Fe	ug/g	550 ± 20	540 ± 30	(36)	541	478 - 601	543 ± 27	(9)	555 ± 30	(6)	524 ± 30	(15)	543 ± 48	(3) XRF
Fe	ug/g	---	---	---	---	---	---	---	---	---	548	(1)	NM	---
Gd	ng/g	---	60	(1)	---	---	---	60	(1)	---	---	---	---	---
Ge	ng/g	---	< 20	---	---	---	---	---	---	< 20	---	---	---	---
H	%	---	5.57	(2)	---	5.54 - 5.6	---	---	---	---	5.54	(1)	CB	5.6 (1) TCGS
H2O-	%	---	6	(1)	---	---	---	---	---	---	---	---	---	---
Hf	ng/g	---	40	(1)	---	---	---	40	(1)	---	---	---	---	---
Hg	ng/g	30 ± 5	30 ± 4	(6)	29	25 - 34	29 ± 3	(4)	30	(2)	---	---	---	---
I	ug/g	---	1.20 ± 0.12	(6)	1.1	1.08 - 1.325	---	1.25 ± 0.12	(4)	---	1.08	(1)	MS	1.1 (1) PAA
In	ng/g	---	1.25	(2)	---	1.2 - 1.3	---	1.25	(2)	---	---	---	---	---
K	%	3.56 ± 0.03	3.56 ± 0.15	(25)	3.59	3.26 - 3.9	3.51 ± 0.15	(4)	3.55 ± 0.16	(8)	3.59 ± 0.08	(11)	4.03	(2) XRF
La	ng/g	370	340 ± 40	(7)	350	260 - 400	---	340 ± 50	(5)	---	332	(2)	NM	332 (2) NM
Li	ug/g	---	1.98	(2)	---	1.93 - 2.04	2.04	(1)	1.93	(1)	1.93	(1)	---	---

TABLE 1570-1: COMPILED DATA FOR NBS SRM 1570 SPINACH (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	OTHER METHODS		
			Mean	SD						Mean ± SD (n)	Mean ± SD (n)	
Lu	ng/g	---	3	(1)	---	7800 - 9200	8770 ± 400 (5)	8150 (10)	3 (1)	---	---	
Mg	ug/g	---	8650 ± 310 (19)	8600	165	155 - 178	162 ± 6 (10)	163 ± 5 (7)	8660 ± 200 (14)	---	---	
Mn	ug/g	165 ± 6	164 ± 6 (39)	---	---	---	---	165 ± 6 (18)	170 ± 12 (3)	XRF	14.6 (1) AE&AF	
Mn	ug/g	---	300 ± 80 (7)	300	200	200 - 420	---	360 (2)	275 ± 95 (4)	PAA	178 (1) DC/PES	
Mo	ng/g	5.9	5.6 ± 0.3 (3)	5.62	5.31	5.31 - 6	---	---	---	---	300 (1) COLOR	
N	%	---	1.42 ± 0.10 (17)	1.43	1.24	1.24 - 1.56	1.560 (2)	1.41 ± 0.10 (8)	1.38 ± 0.10 (7)	CB	6.00 (1) TGS	
Na	ng/g	---	306 (1)	---	---	---	---	306 (1)	---	---	---	
Ni	ug/g	6	5.6 ± 0.7 (24)	5.51	4.1	4.1 - 7.5	6.5 ± 1.4 (3)	6.2 ± 1.4 (4)	5.5 ± 0.6 (13)	---	---	
Ni	ug/g	---	---	---	---	---	---	---	5.3 (2)	XRF	6.4 (1) POL	
P	ug/g	5500 ± 200	5240 ± 310 (24)	5300	4530	4520 ± 220	(4)	---	6.1 (1)	PAA	5.12 (1) VOLT	
P	ug/g	---	---	---	---	---	---	5160 ± 310 (17)	5065 (2)	COLOR	5100 (1) CPAA	
Pb	ug/g	1.2 ± 0.2	1.19 ± 0.25 (27)	1.16	0.8	0.8 - 2	1.19 ± 0.12 (17)	---	1.5 ± 0.7 (6)	1.10 ± 0.10 (4)	ASV	1.12 (1) SSMS
Pb	ug/g	---	---	---	---	---	---	---	2.0 (1)	PAA	---	
Pd	ng/g	---	< 2	---	---	---	---	< 2	---	---	---	
Pr	ng/g	---	< 60	---	---	---	---	< 60	---	---	---	
Rb	ug/g	12.1 ± 0.2	11.5 ± 0.9 (6)	11.32	10	10 - 12.7	12.45 (2)	11.0 ± 0.7 (4)	---	---	---	
S	ug/g	---	4350 ± 470 (7)	4440	3600	4860	---	---	4317 (2)	4320 ± 530 (4)	CB	4500 (1) XRF
Sb	ng/g	40	40 ± 9 (7)	40	27	27 - 50	---	40 ± 9 (7)	---	---	---	
Sc	ng/g	160	166 ± 11 (9)	170	150	150 - 180	---	166 ± 11 (9)	---	---	---	
Se	ng/g	---	40 ± 14 (9)	37	24	24 - 66	33.95 (2)	48 ± 19 (4)	---	37 (1)	FLUOR	33 (2) GC
Si	ug/g	---	2900 (1)	---	---	---	---	---	2900 (1)	---	---	
Sr	ng/g	---	56 ± 24 (3)	54	33	33 - 80	---	56 ± 24 (3)	---	---	---	
Sn	ug/g	---	3.1 (1)	---	---	---	---	---	3.1 (1)	---	---	
Sr	ug/g	87 ± 2	80 ± 5 (7)	82.5	72.5	72.5 - 87	85.35 (2)	83.4 (1)	77 (2)	72.5 (1)	XRF	82.5 (1) AE&AF
Ta	ug/g	---	0.23 (1)	---	---	---	---	0.23 (1)	---	---	---	
Tb	ng/g	---	8 (1)	---	---	---	---	8 (1)	---	---	---	
Th	ng/g	120 ± 30	130 (2)	---	110	110 - 150	---	130 (2)	---	---	---	
Ti	ug/g	---	18 ± 10 (3)	16.5	8.9	8.9 - 28	---	---	18 ± 10 (3)	---	---	
Tl	ng/g	30	31 (1)	---	---	---	---	---	---	---	31 (1) SSMS	
U	ng/g	46 ± 9	46 ± 3 (4)	45	42	42 - 48	---	46 ± 3 (4)	---	---	---	
V	ug/g	---	1.20 ± 0.16 (12)	1.2	0.928	0.928 - 1.5	---	1.11 ± 0.10 (7)	1.37 ± 0.11 (3)	1.44 (1)	COLOR	1.08 (1) DC/PES
W	ng/g	---	140 (1)	---	---	---	---	140 (1)	---	---	---	
Yb	ng/g	---	12.5 (2)	---	2	2 - 23	---	12.5 (2)	---	---	---	
Zn	ug/g	50 ± 2	50 ± 4 (3)	50	42	42 - 60.1	52 ± 4 (8)	49 ± 5 (7)	49.3 ± 2.5 (22)	60 ± 7 (3)	XRF	52 (1) DC/PES
Zn	ug/g	---	---	---	---	---	---	49.2 (1)	PAA	49.5 (1) SSMS		

TABLE 1570-1: COMPILED DATA FOR NBS SRM 1570 SPINACH (cont.)

COMPOUND	CAS #	UNITS	NBS	CONSENSUS Mean (n)
Total Folates	---	ug/g	---	5.3 (1)
Total Pantothenates	---	ug/g	---	14.3 (1)
Thiamine	---	ug/g	---	5.6 (1)
Protein	---	%	---	33.2 (1)
Nicotinic Acid	59676	ug/g	---	42.4 (1)
Vitamin B-6	65236	ug/g	---	12.1 (1)
Riboflavin	83885	ug/g	---	17.6 (1)

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Total Folates (ug/g)</u>					<u>As (ng/g)</u>				
5.3		VV	85TAN 01		62	13	7	FAA	82HOE 02
<u>Total Pantothenates (ug/g)</u>					114			HAA	77IHN 01
14.3		VV	85TAN 01		120	10	7	RTNA	80GAL 02
<u>Thiamine (ug/g)</u>					120	70		ITNA	85NDI 01
5.6		VV	85TAN 01		140	10		AA	83RAP 01
<u>Protein (%)</u>					146			RTNA	85TIA 01
33.2		VV	85TAN 01		147	1		RTNA	79HOE 01
<u>Nicotinic acid (ug/g)</u>					149	25		RTNA	85GAU 04
42.4		VV	85TAN 01		150	10	11	HAA	82JON 01
<u>Vitamin B-6 (ug/g)</u>					150	13	7	FAA	82HOE 02
12.1		VV	85TAN 01		152	5	7	FAA	82HOE 02
<u>Riboflavin (ug/g)</u>					160			FAA	78CAP 01
17.6		VV	85TAN 01		160	10	11	HAA	82JON 01
<u>Ag (ng/g)</u>					170	10		ICPES	82HAH 01
65	10	RTNA	80SLO 01		170			COLOR	77BUR 01
65	40	AA	80JAC 01		170	10		FAA	80DUP 01
<u>Al (ug/g)</u>					170	20		RTNA	80SLO 01
366	48	11	ICPES	81MUN 01	180	20		HAA	80TAM 01
402.6	23.2	6	COLOR	85BAR 01	180	70		IENA	82GLA 02
412.7	24.8	6	COLOR	85BAR 01	<u>Au (ng/g)</u>				
482		ICPES	78CAP 01		0.4			RTNA	80SLO 01
536		ICPES	81GOO 01		2	0.0004		ITNA	79REN 03
609	16	11	ICPES	81MUN 01	<u>B (ug/g)</u>				
620	36	ICPES	83SCH 03		20.9	0.3		ICPES	79HER 01
782	31	11	ICPES	82JON 01	27	3.5		ICPES	84PRI 01
819	30	ICPES	84ABD 01		27.2	0.8	11	ICPES	81MUN 01
820	25	ITNA	84GLA 02		27.6	1.3	11	ICPES	81MUN 01
824	10	ITNA	80SLO 01		28	0.4		TCGS	82GLA 02
829	23	ITNA	77NAD 02		28.5			ICPES	81GOO 01
854	25	ICPES	83SCH 04		<u>Ba (ug/g)</u>				
861	30	AA	83RAP 01		<	45	L	ITNA	78CAP 01
865	47	ICPES	84NAD 01		13.1	1.8		ITNA	77NAD 02
870		ITNA	84GLA 11		13.9	0.7		ICPES	85WHI 02
881		ITNA	78CAP 01		17.8	2		ICPES	84NAD 01
909	11	IENA	85GLA 02		87	29		ITNA	79REN 03
1190	35	ITNA	81GLA 03		<u>Be (ng/g)</u>				
					<	30	L	ICPES	82KUE 01
					<	30	L	ICPES	82KUE 01
					<	30	L	ICPES	82KUE 01
					<	60	L	ICPES	78CAP 01
					<	80		ICPES	84WOL 02
					16	6		ICPES	83SCH 03

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Bi (ng/g)</u>										
<	8	L	ICPES	82MAH 01		1.49	0.1	ITNA	77NAD 02	
<u>Br (ug/g)</u>										
42.4	2.4	5	ITNA	80HOE 01		1.54	0.01	ICPES	79HER 01	
43.6	2.3	5	IENA	79GLA 02		1.62		ICPES	78CAP 01	
45			ITNA	84GLA 11		1.78	0.25	ITNA	79REN 03	
45	3.3		ITNA	80SLO 01		2.45		EXRF	81PAR 01	
45.1	0.3	5	IENA	79GLA 02		1.2		FAA	80PRE 01	
46	2	5	ITNA	80HOE 01		1.2	0.05	FAA	84KUR 01	
47	4		ITNA	84GLA 02		1.2	0.15	ASV	82GAJ 01	
47.2	0.5		ITNA	77NAD 02		1.23	0.16	ASV	82SAT 02	
48			ITNA	78CAP 01		1.3		FAA	82PRE 01	
48	9.4		ITNA	79REN 03		1.3	0.05	AA	83RAP 01	
51.1	2.5		CPXRF	84BIS 01		1.3	0.2	11	ICPES	81MUN 01
52	4.8		ITNA	79KOB 03		1.32		ASV	78CAP 01	
54	3	35	NAA	81GLA 03		1.38	0.08	RTNA	80SLO 01	
55.3	3.8	5	ITNA	80TOU 01		1.39	0.11	ICPES	82EVA 01	
138			EXRF	81PAR 01		1.4	0.08	11	ICPES	82JON 01
						1.4	0.1	ICPES	83SCH 04	
<u>C (%)</u>										
40.7	1	CB	77WAT 02			1.4	0.2	ICPES	83SCH 03	
40.82	0.81	CB	80SCH 02			1.41	0.03	6	ICPES	82KUE 01
						1.42	0.03	6	ICPES	82KUE 01
<u>Ca (%)</u>										
0.82	0.11		ITNA	80SLO 01		1.45	0.07	6	ICPES	82KUE 01
0.85	0.01		CPXRF	84BIS 01		1.46	0.02	NAA	76DER 01	
0.99	0.05		ICPES	84ABD 01		1.46		FAA	80LEG 01	
1.19	0.09	6	EXRF	79MAT 01		1.47		FAA	83DEL 01	
1.21		35	AA	81GLA 04		1.48		RTNA	85TIA 01	
1.22	0.02		ICPES	84WOL 02		1.49	0.08	11	ICPES	82JON 01
1.24	0.08	11	ICPES	82JON 01		1.5	0.3	AA	84KAN 01	
1.25	0.01	11	ICPES	82JCN 01		1.52	0.07	RTNA	77DER 01	
1.29	0.03	6	ICPES	82KUE 01		1.6	0.2	FAA	81KNA 01	
1.29	0.04	11	ICPES	82KUE 01		1.67	0.29	SSMS	77PAU 01	
1.29	0.04	11	ICPES	81MUN 01		1.7	0.1	RTNA	76GAL 01	
1.3			ICPES	81GOO 01		1.7	0.2	D	FAA	80SCH 08
1.34	0.07		ICPES	85WHI 02		1.7	0.3	11	ICPES	81MUN 01
1.34	0.23		ICPES	84NAD 01		2	0.1	AA	76GAL 01	
1.347	0.014		NM	81YUZ 01		2.1	0.2	ICPES	79HER 01	
1.35	0.025	6	ICPES	82KUE 01		2.2	1	11	ICPES	82JON 01
1.35	0.06	11	ICPES	81MUN 01		2.8	0.1	11	ICPES	82JON 01
1.36	0.04	11	ICPES	82JON 01						
1.37	0.07	5	ITNA	80TOU 01		<u>Ce (ng/g)</u>				
1.38	0.014	6	ICPES	82KUE 01		240	30	RTNA	80SLO 01	
1.39	0.03	11	ICPES	82JON 01		671	162	RTNA	83TJI 01	
1.4	0.04	6	EXRF	79MAT 01						
1.44	0.035		ICPES	83SCH 03						
1.46			ITNA	78CAP 01						

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference					
<u>Cl (ug/g)</u>															
6000		35	ITNA	81GLA 04		4.7	0.3		DCPES	79REE 01					
6290			ITNA	78CAP 01		4.7	0.3	D	DCPES	81REE 01					
6500	300		CPXRF	79REN 02		4.7	0.4		ITNA	82GLA 02					
6800	100		ITNA	80SLO 01		4.8			ITNA	78CAP 01					
7000			ITNA	84GLA 11		5.2	0.5		ITNA	76GAL 01					
7000	120		ITNA	84GLA 02		5.2	1.5		AE+AF	82GOL 01					
10000	1000		ITNA	77NAD 02		5.8	0.2		AA	76GAL 01					
						6	0.7		PAA	80YAM 01					
<u>Co (ug/g)</u>															
0.9	0.1		PAA	80YAM 01		6.2	0.1		ICPES	79HER 01					
1.41			ITNA	78CAP 01		7.5	1.6		ITNA	79REN 03					
1.42	0.1		AA	83RAP 01		20.5	2.8	11	RTNA	76STE 01					
1.47	0.1		AA	80JAC 01		21	2		RTNA	77MEL 01					
1.49	0.05		RTNA	80SLO 01		21.3	2.6	11	RTNA	76STE 01					
1.5	0.1		ITNA	79KOB 03		21.8	1.5	11	RTNA	76STE 01					
1.5	0.2		ITNA	79REN 03		23.9	0.9	11	RTNA	76STE 01					
1.5	0.4		ICPES	84ABD 01		24.5	1.2	11	RTNA	76STE 01					
1.6	0.1	5	ITNA	80TOU 01		24.8	2.8		ITNA	76STE 01					
1.65			FAA	82HOE 01		<u>Cs (ng/g)</u>									
1.68	0.03		RTNA	77MEL 01		<	200	L	ITNA	82GLA 02					
1.7	0.1		ITNA	76GAL 01		48	5		ITNA	77NAD 02					
1.76	0.01		ITNA	77NAD 02		63	3		ITNA	84GLA 11					
3.2	0.2		AA	76GAL 01		64	2		ITNA	84GLA 02					
						68	8		ITNA	85GAU 04					
<u>Cr (ug/g)</u>															
1.9	0.3	11	ICPES	81MUN 01		270	40		RTNA	77MEL 01					
2.0			ICPES	81GOO 01		320	40		ITNA	79REN 03					
3.06	0.3		AA	80JAC 01		<u>Cu (ug/g)</u>									
3.33	0.74		ICPES	84NAD 01		<	20		ITNA	84GLA 11					
3.5	0.3	6	ICPES	82KUE 01		5.3	1.3		ITNA	85NDI 01					
3.54	0.3	6	ICPES	82KUE 01		9.1	0.4		AA	76GAL 01					
3.6	0.5	11	ICPES	82JON 01		9.5			ICPES	81GOO 01					
3.7	1.2	11	ICPES	81MUN 01		10.2	1		ICPES	82EVA 01					
3.75		11	AA	79HOE 02		10.5	0.3	11	ICPES	81MUN 01					
3.9			POL	83HOL 01		10.6	0.9		CPXRF	84BIS 01					
4.0	0.34		ITNA	85NDI 01		10.7	0.5		ICPES	83SCH 03					
4.2	0.7		ICPES	83SCH 03		10.8			ASV	83HOL 01					
4.3	0.5		ITNA	77NAD 02		10.9	0.3	11	ICPES	82JON 01					
4.3	0.7	6	ICPES	82KUE 01		10.9	0.6		RTNA	80SLO 01					
4.4		11	AA	79HOE 02		11.0	0.2	7	RTNA	80GAL 02					
4.4			FAA	82HOE 01		11.0	0.2		AA	83RAP 01					
4.4	0.2		ICPES	84ABD 01		11.1	0.2	11	ICPES	82JON 01					
4.47	0.4		FAA	83CAR 02		11.1	0.5	11	ICPES	82JON 01					
4.5	0.2		RTNA	76GAL 01		11.1	0.5	11	ICPES	81MUN 01					
4.5	0.3		ITNA	79KOB 03		11.2	0.4	11	ICPES	82JON 01					
4.51		11	AA	79HOE 02		11.4	0.5		RTNA	79KOB 01					
4.6	0.2	11	ICPES	82JON 01		11.5	0.4		FAE	76EPS 01					
4.7	0.15		AA	83RAP 01		11.5	0.5		SSMS	77PAU 01					

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g) cont.</u>						<u>Fe (ug/g)</u>				
11.6	0.3		ICPES	84WOL 02		178	2		DCPES	81REE 01
11.6	0.7		ITNA	79KOB 03		384	79	11	ICPES	81MUN 01
11.6	0.7		RTNA	78KOB 01		470	50	6	ICPES	82KUE 01
11.8	0.3		RTNA	77DER 01		478			ICPES	78CAP 01
11.8	0.3	6	ICPES	82KUE 01		491	20	11	ICPES	82JON 01
11.8	2.5		VV	80SCH 05		494			FAA	78CAP 01
12.0			RTNA	85TIA 01		500	26	6	FAA	84FUD 02
12.0	0.2		IDMS	84BRO 03		506	34		CPXRF	84BIS 01
12.0	0.3	6	ICPES	82KUE 01		508	14		ICPES	83SCH 03
12.0	0.5		ICPES	80SCH 08		510			ITNA	78CAP 01
12	1	2	FAA	84MIL 01		511	7		ICPES	79HER 01
12	1	2	FAA	84MIL 01		516	36		ICPES	84NAD 01
12.06	0.03		COLOR	77BUR 01		518	8	11	ICPES	82JON 01
12.1			AA	80EVA 01		522	14	11	COLOR	82SCH 03
12.1	0.1		COLOR	76EPS 01		525	11	6	EXRF	79MAT 01
12.1	0.2		ICPES	79HER 01		527	30		ICPES	84ABD 01
12.1	0.4		AA	82EVA 01		530	11	6	ICPES	82KUE 01
12.14	0.61		RTNA	85DYB 01		540	10	6	ICPES	82KUE 01
12.2	0.1	6	ICPES	82KUE 01		540	18	D	ICPES	80SCH 08
12.2	0.3		AA	85KOJ 01		540	18		ICPES	80SCH 05
12.3			ICPES	78CAP 01		540	23		ITNA	79KOB 03
12.3	11		AA	79HOE 02		541	15	11	ICPES	82JON 01
12.6			FAA	78CAP 01		545			AA	80EVA 01
12.6	0.2		ICPES	83SCH 04		548	9		NM	80SUZ 01
12.6	1.4	6	EXRF	79MAT 01		551		11	AA	79HOE 02
12.7	0.4		AA	76EPS 01		552	10	6	FAA	84FUD 02
13	0.4		ICPES	84ABD 01		556			ICPES	81GOO 01
13	1	D	DCPES	81REE 01		556	11	11	COLOR	82SCH 03
13	1		DCPES	79REE 01		556	15	2	FAA	84MIL 01
13.2		11	AA	79HOE 02		557	8		ITNA	79DAS 01
18	3		ICPES	84NAD 01		557	8		RTNA	80SLO 01
						557	19	11	ICPES	82JON 01
<u>Eu (ng/g)</u>						558	12	2	FAA	84MIL 01
						562	25		AA	83RAP 01
<	200	L	ITNA	78CAP 01		566	18		ITNA	77NAD 02
11	1		RTNA	83TJI 01		570		11	AA	79HOE 02
14	1		ITNA	79KOB 03		576	18	11	ICPES	81MUN 01
20	1		ITNA	77NAD 02		597	6	6	EXRF	79MAT 01
						600	90	35	ITNA	81GLA 03
<u>F (ug/g)</u>						601	12		ICPES	84WOL 02
						660	300		ITNA	79REN 03
4.3	0.4		ISE	83KNA 01		763	34		RTNA	77MEL 01
4.4	0.3		ISE	84GLA 02		1200			EXRF	81PAR 01
						60	21		RTNA	83TJI 01
<u>Gd (ng/g)</u>										

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference						
<u>Ge (ng/g)</u>																
<	20	L	ICPES	82HAAH 01		3.53	0.032	6	ICPES	82KUE 01						
<u>H (%)</u>																
5.54	0.08	CB	80SCH	02		3.54			ITNA	80EDD 01						
5.6	0.1	35	TCGS	79GLA 04		3.56		1	AA	78SZY 01						
<u>H2O (%)</u>																
6		VV		85TAN 01		3.57	0.29	2	FAA	84MIL 01						
<u>Hf (ng/g)</u>																
40	20	RTNA	80SLO	01		3.58	0.06		ICPES	84ABD 01						
25	11	CVAA	79HOE	02		3.59			ICPES	79COO 01						
26	8	RTNA	80SLO	01		3.6	0.06		ICPES	85WHI 02						
29		CVAA	83MAR	05		3.6	0.09		ITNA	79KOB 03						
30	5	CVAA	82GLA	02		3.61			AA	78SZY 01						
33	16	CVAA	82DOO	01		3.61	0.35		ITNA	82EHM 01						
34	3	ITNA	77NAD	02		3.65	0.21		ICPES	84WOL 02						
110	20	RTNA	77MEL	01		3.7	0.04	11	ICPES	82JON 01						
<u>Hg (ng/g)</u>																
2.58	0.09	11	ICPES	81MUN 01		3.7	0.1	11	ICPES	82JON 01						
3.09	0.54		ICPES	84NAD 01		3.73			ITNA	78CAP 01						
3.26	0.23		ITNA	79REN 03		3.74	0.07		ITNA	80SLO 01						
3.29	0.09	2	FAA	84MIL 01		3.9	0.1	11	ICPES	82JON 01						
3.29	0.18		ICPES	79HER 01		4.02	0.08		CPXRF	84BIS 01						
3.43	0.11		ITNA	77NAD 02		4.04	0.06	6	EXRF	79MAT 01						
3.44	0.2	11	ICPES	81MUN 01		4.85	0.05	6	EXRF	79MAT 01						
3.46			ITNA	84GLA 11		7.95			EXRF	81PAR 01						
<u>I (ug/g)</u>																
1.08	0.04	MS	85SCH	01		260	50		RTNA	80SLO 01						
1.08	0.16	IENA	82SAT	01		315			NM	83KAT 01						
1.1	0.2	PAA	77WIL	01		320	30		ITNA	77NAD 02						
1.267	0.054	35	RTNA	81ALL 01		350	10		NM	85KAT 02						
1.325	0.055		RTNA	81STR 01		350	60		ITNA	79REN 03						
1.325	0.055	34	RTNA	81ALL 01		361	89		RTNA	83TJI 01						
<u>In (ng/g)</u>																
1.2	0.1		RTNA	78KOB 01		400	50		ITNA	85KAT 02						
1.3	0.2		RTNA	79KOB 01		<u>Li (ug/g)</u>										
<u>K (%)</u>																
2.58	0.09	11	ICPES	81MUN 01		1.93	0.06		ICPES	84NAD 01						
3.09	0.54		ICPES	84NAD 01		2.04	0.01		AA	85EVA 01						
3.26	0.23		ITNA	79REN 03		<u>Lu (ng/g)</u>										
3.29	0.09	2	FAA	84MIL 01		<	5	L	RTNA	80SLO 01						
3.29	0.18		ICPES	79HER 01		3	1		RTNA	83TJI 01						
3.43	0.11		ITNA	77NAD 02												
3.44	0.2	11	ICPES	81MUN 01												
3.46			ITNA	84GLA 11												
3.52	0.1	6	ICPES	82KUE 01												

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Mg (ug/g)</u>										
6990			ICPES	81GOO 01		165	3	6	EXRF	79MAT 01
7000			ICPES	78CAP 01		165	8	2	FAA	84MIL 01
7300	500		ITNA	80SLO 01		165	10		ICPES	85WHI 02
7800	200		ICPES	84ABD 01		166	1		ICPES	79HER 01
8300	800		ICPES	84NAD 01		166	5	11	ICPES	82JON 01
8340	130		ICPES	84WOL 02		167	5		ICPES	83SCH 03
8400			FAA	78CAP 01		167	6	11	ICPES	82JON 01
8500	120	11	ICPES	81MUN 01		167	7		ICPES	82EVA 01
8550	65	6	ICPES	82KUE 01		168	3	D	ICPES	80SCH 08
8600	230	6	ICPES	82KUE 01		168	3		VV	80SCH 05
8600	400	11	ICPES	82JON 01		168	4		AA	83RAP 01
8600	500		ICPES	85WHI 02		168	6		ICPES	83SCH 04
8700	100		ICPES	79HER 01		169	4		ITNA	80SLO 01
8700	500	2	FAA	84MIL 01		170			AA	80EVA 01
8790	150	6	ICPES	82KUE 01		170	4		AA	82EVA 01
8800	100	11	ICPES	82JON 01		171			ITNA	78CAP 01
8800	270		ICPES	83SCH 03		171	1	6	ICPES	82KUE 01
8833	299	11	ICPES	81MUN 01		172	5	6	ICPES	82KUE 01
8900	300	11	ICPES	82JON 01		173	3		ICPES	84NAD 01
9000	200	11	ICPES	82JON 01		176	2	11	ICPES	81MUN 01
9000	600		ITNA	78CAP 01		178	2		DCPES	79REE 01
9200	300	2	FAA	84MIL 01		184	10	6	EXRF	79MAT 01
9800			ITNA	77NAD 02		185			ICPES	81GOO 01
						187.9	18.9		PAA	80YAM 01
<u>Mn (ug/g)</u>										
						200			ITNA	79REN 03
						684			EXRF	81PAR 01
1.3	0.1		DCPES	81REE 01						
49	2	11	ICPES	82JON 01						
102	3		AA	76GAL 01						
118	3		ITNA	76GAL 01		200	100	11	ICPES	82JON 01
146	32		AE+AF	82GOL 01		200	100	11	ICPES	82JON 01
155			FAA	78CAP 01		300	41		COLOR	85EVA 02
156		11	AA	79HOE 02		300	100	11	ICPES	82JON 01
156	4		ICPES	84ABD 01		300	100		RTNA	80SLO 01
156	5		ITNA	79KOB 03		400	200	11	ICPES	82JON 01
157			ICPES	78CAP 01		420			RTNA	85TIA 01
157	5	6	FAA	84FUD 02						
157	13	11	ICPES	81MUN 01						
158	7	11	ICPES	82JON 01						
158	13	2	FAA	84MIL 01		5.31			VV	85TAN 01
159		11	AA	79HOE 02		5.62	0.11		CB	80SCH 02
160		35	ITNA	81GLA 04		6	0.4	35	TCGS	79GLA 04
160	3	11	ICPES	82JON 01						
160	3		ICPES	84WOL 02						
161	6		ITNA	77NAD 02						
162	4	6	FAA	84FUD 02						
162	7		CPXRF	84BIS 01						
162	9		ITNA	84GLA 02						
164			ITNA	84GLA 11						
165	3	6	ICPES	82KUE 01						

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Na (%)</u>						<u>P (ug/g)</u>				
1.13	0.02		ITNA	80SLO 01		4100	200		ICPES	84NAD 01
1.24	0.21		ICPES	84NAD 01		4500			ICPES	78CAP 01
1.28	0.1		ITNA	82SCH 05		4530	120	11	COLOR	84LIN 01
1.29	0.11	11	ICPES	81MUN 01		4600	100		ICPES	84ABD 01
1.31	0.07		ITNA	77NAD 02		4814	300		ICPES	84PRI 01
1.33	0.03	11	ICPES	81MUN 01		4865			ICPES	81GOO 01
1.33	0.05		ITNA	79KOB 03		5082	192	11	ICPES	81MUN 01
1.41			ICPES	81GOO 01		5100			FAA	79EDI 01
1.42	0.02		ICPES	84WOL 02		5100	120		ICPES	84WOL 02
1.43			ITNA	84GLA 02		5100	200		CPAA	83MAS 02
1.43	0.03		ICPES	84ABD 01		5120	60	11	ICPES	81MUN 01
1.44			ITNA	78CAP 01		5200	200	11	ICPES	82JON 01
1.48	35		ITNA	81GLA 04		5240	70	6	ICPES	82KUE 01
1.5			ITNA	84GLA 11		5300	70	6	ICPES	82KUE 01
1.54	0.14		ITNA	79REN 03		5300	100	11	ICPES	82JON 01
1.547	0.021		ICPES	85WHI 02		5300	300		ICPES	85WHI 02
1.55	1	AA		78SYZ 01		5350	45	6	ICPES	82KUE 01
1.56	1	AA		78SYZ 01		5360	270		ICPES	81OWE 01
						5400			ICPES	79EDI 01
<u>Nd (ng/g)</u>						5500	200	11	ICPES	82JON 01
306	73		RTNA	83TJI 01		5500	300	14	FAA	84LIN 01
						5500	500	14	AA	84LIN 01
<u>Ni (ug/g)</u>						5600	100	11	COLOR	84LIN 01
1.3	0.1		DCPES	79REE 01		5600	300	14	FAA	84LIN 01
2.3	0.5		RTNA	80SLO 01		5600	400	7	NM	81SHI 01
4.1	0.5		ITNA	77NAD 02		5700	200	11	ICPES	82JON 01
4.8	0.7		ICPES	82EVA 01		6000	100		ICPES	79HER 01
4.9	0.2	11	ICPES	82JON 01						
5	7		ICPES	84WOL 02		<u>Pb (ug/g)</u>				
5.1	0.1	11	ICPES	82JON 01		0.8	0.1	11	ICPES	82JON 01
5.1	0.4	11	ICPES	81MUN 01		0.8	0.3	11	ICPES	82JON 01
5.12			VOLT	81PIH 01		1.0	0.1		FAA	80LEG 01
5.2	0.3		CPXRF	84BIS 01		1.0	0.8		ICPES	79HER 01
5.4	0.1	11	ICPES	82JON 01		1.02			FAA	82HOE 01
5.4	0.1	11	ICPES	82JON 01		1.03	0.15		ASV	82GAJ 01
5.5	0.5		ICPES	83SCH 03		1.04	0.09		ASV	80SYZ 01
5.51	0.32	6	ICPES	82KUE 01		1.09	0.06		FAA	79DAB 02
5.6	0.3		AA	83RAP 01		1.1		11	FAA	79HOE 02
5.7	0.3	11	ICPES	81MUN 01		1.1	0.06	AA		82EVA 01
5.8	0.2		AA	82EVA 01		1.1	0.08		ASV	82SAT 02
6.03	0.52	6	ICPES	82KUE 01		1.1	0.1	AA		80SCH 05
6.1	0.2		PAA	80YAM 01		1.1	0.1	D	FAA	80SCH 08
6.17	0.72	6	ICPES	82KUE 01		1.1	0.2		FAA	81KNA 01
6.4			POL	83HOL 01		1.12	0.03		SSMS	77PAU 01
6.5	0.2		RTNA	78KOB 01		1.16	0.08		FAA	82RAI 01
6.5	0.3		RTNA	79KOB 01		1.18	0.12		AA	84STO 01
6.7	0.8		ICPES	84ABD 01		1.2			FAA	80PRE 01
7.5	0.5		RTNA	77MEL 01		1.25			ASV	78CAP 01
8.1			FAA	82HOE 01		1.25	0.2		AA	83RAP 01
8.1	0.2		ICPES	79HER 01						

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Pb (ug/g) cont.</u>										
1.3			FAA	82PRE 01		14	3	H	ICPES	82HAA 01
1.3	6		FAA	81HIN 01		27	6		ITNA	77NAD 02
1.3	6		FAA	82KOI 01		31	1		RTNA	80KOS 02
1.3	0.4		HAA	82WEI 01		38	3		RTNA	79HOE 01
1.4	6		FAA	82KOI 01		40	10	7	RTNA	80GAL 02
1.4	6		FAA	81HIN 01		44	2		ITNA	79KOB 03
1.75	1.33		ICPES	82EVA 01		50			ITNA	78CAP 01
2.0	1.4		PAA	80YAM 01		50	20		RTNA	80SLO 01
2.2	0.6		ICPES	83SCH 03		690	150		ITNA	79REN 03
2.5	0.4		ICPES	84ABD 01						
3.1	1.6	11	ICPES	81MUN 01						
3.4	0.6		AA	84KAN 01						
4.4	3.1	11	ICPES	81MUN 01						
<u>Pd (ng/g)</u>										
<	2	L	RTNA	81BYR 01		150	30	5	ITNA	80TOU 01
						153	6		ITNA	86GAU 01
						159	12		ITNA	84GLA 11
						160			ITNA	78CAP 01
						170			ITNA	80EDD 01
						170	4		ITNA	77NAD 02
<u>Pr (ng/g)</u>										
<	60	L	RTNA	80SLO 01		170	20		RTNA	80SLO 01
						180	10		ITNA	79KOB 03
						180	20		RTNA	77MEL 01
						470	40		ITNA	79REN 03
<u>Rb (ug/g)</u>										
10			ITNA	78CAP 01						
11	1	35	ITNA	81GLA 03						
11.32	3.1		ITNA	79REN 03						
11.6	0.3		ITNA	77NAD 02						
12.2	0.7		FAA	83GRO 02						
12.7	0.47		AA	85EVA 01						
17	3		RTNA	77MEL 01						
39			EXRF	81PAR 01						
<u>S (ug/g)</u>										
2400	600		CPXRF	79REN 02						
3600	500		CB	84GLA 11						
3834	58		ICPES	84PRI 01						
4400	400		CB	86BOW 01						
4440	D		CB	85JAC 01						
4440	60	6	CB	84JAC 01						
4500	270		WXRF	86BOW 01						
4800	200		ICPES	85WHI 02						
4860	D		CB	85JAC 01						
4860	160	6	CB	84JAC 01						
<u>Si (ug/g)</u>										
						2900	900		ICPES	84NAD 01
<u>Sm (ng/g)</u>										
						33	4	5	ITNA	80TOU 01
						54	21		RTNA	83TJI 01
						80	20		RTNA	80SLO 01
						200	140		ITNA	79REN 03

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u><u>Sn (ug/g)</u></u>											
	<	0.02	L	ICPES	82HAH 01		0.928	0.0013	11	RTNA	82HEY 02
3.1				ICPES	78CAP 01		1.06	0.17		ITNA	77NAD 02
							1.08	0.07	D	DCPES	81REE 01
<u><u>Sr (ug/g)</u></u>											
72.5	3.4		CPXRF	84BIS 01			1.08	0.07		DCPES	79REE 01
75	1		ICPES	84NAD 01			1.093	0.085		ITNA	82HEY 02
79	1		ICPES	79HER 01			1.13	0.01		RTNA	78BYR 01
82.5	15.8		AE+AF	82GOL 01			1.13	0.018	11	RTNA	82HEY 02
83.4	0.2		IENA	85GAU 04			1.2	0.06		ITNA	76GAL 01
83.7	0.7		AA	85GAU 04			1.207	0.0031	11	RTNA	82HEY 02
87	8		AA	85EVA 01			1.28	0.07	11	ICPES	82JON 01
208			EXRF	81PAR 01			1.34	0.06	11	ICPES	82JON 01
							1.44			COLOR	85EVA 02
							1.5	0.2		ICPES	83SCH 03
							1.7			ITNA	78CAP 01
<u><u>Ta (ug/g)</u></u>											
0.23	0.08		ITNA	79REN 03			<u><u>W (ng/g)</u></u>				
							140	50		RTNA	80SLO 01
<u><u>Tb (ng/g)</u></u>											
8	1		RTNA	83TJI 01			<u><u>Yb (ng/g)</u></u>				
							2	1		RTNA	80SLO 01
<u><u>Th (ng/g)</u></u>											
110	10		ITNA	77NAD 02			23	2		RTNA	83TJI 01
150	40		RTNA	80SLO 01			<u><u>Zn (ug/g)</u></u>				
							42	2		RTNA	80SLO 01
<u><u>Ti (ug/g)</u></u>											
8.9	1.4		ICPES	83SCH 03			43.1	4		ICPES	82EVA 01
16.5			ICPES	78CAP 01			45.9	2.8		RTNA	77DER 01
28	2		ICPES	84NAD 01			46	1	11	ICPES	82JON 01
							46	2	11	ICPES	82JON 01
<u><u>Tl (ng/g)</u></u>											
31	5		SSMS	77PAU 01			46.2	0.6	11	ICPES	82JON 01
							46.7			AA	79HOE 02
<u><u>U (ng/g)</u></u>											
42			DNA	84GLA 02			47	0.48		ITNA	79REN 03
45	0.8	35	DNA	80GLA 04			47	1.2		ICPES	84WOL 02
47	5		DNA	86GAU 01			47	2.5		ICPES	84MIL 01
48	2		DNA	85GAU 04			47	4		ICPES	83SCH 03
69	120	R	DNA	81GLA 03			48			ICPES	84ABD 01
							48			ICPES	84ABD 01
							48			ITNA	78CAP 01
							48.9	1	11	ICPES	82JON 01
							49.2	2	11	ICPES	82JON 01
							49.5	3	11	ICPES	82JON 01
							49.8	3	D	ICPES	80SCH 08
							49.8	3		ICPES	80SCH 05
							49.8	4.6	11	ICPES	81MUN 01
							49.8	0.1		PAA	80YAM 01
							49.8	0.7		SSMS	80PAU 01
							49.8	1.3	6	ICPES	82KUE 01

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Zn (ug/g) cont.</u>					
50			ICPES	81GOO 01	
50	1		ITNA	77NAD 02	
50	3		ICPES	85WHI 02	
50.6	1.3	6	ICPES	82KUE 01	
50.8			AA	80EVA 01	
50.8	1.9		AA	82EVA 01	
51	2		ICPES	84NAD 01	
51.2	0.6	6	ICPES	82KUE 01	
52	1		DCPES	79REE 01	
52	1	D	DCPES	81REE 01	
52	2.2		ITNA	79KOB 03	
52	3		AA	83RAP 01	
52.6	2.5	11	ICPES	81MUN 01	
52.9	2.2	6	EXRF	79MAT 01	
53		11	AA	79HOE 02	
53	3	11	ICPES	82JON 01	
54	1		ICPES	79HER 01	
54	3		ICPES	83SCH 04	
55	2	2	FAA	84MIL 01	
57	8		RTNA	77MEL 01	
59.7			FAA	78CAP 01	
60.1	2	6	EXRF	79MAT 01	
66.8	8		CPXRF	84BIS 01	
72.5	1.6		RTNA	76GAL 01	
72.8	1.3		AA	76GAL 01	
119			EXRF	81PAR 01	

TABLE 1571-1: COMPILED DATA FOR NBS SRM 1571 ORCHARD LEAVES (revised 3/1/86)

ELE	UNITS	NBS	SENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		Mean ± SD (n)		Mean ± SD (n)		Mean ± SD (n)		OTHER METHODS		Mean (n) Method			
			Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)		
A9	n9/9	---	320	(2)	---	13 - 620	---	400	± 60	(19)	241 ± 98	(11)	4.88	(1)	210 ± 50	(9)	0ES	4.30	(1)	C <sub>PA</sub>	347	(2)	POL			
Al	ug/9	---	323 ± 112	(51)	347	123 - 520	455	(2)	10.7 ± 1.3	(179)	10.8 ± 1.5	(77)	13.0 ± 2.5	(14)	10.1 ± 1.2	(5)	PAA	351	(2)	14NAA	144	(2)	COLOR			
Al	ug/9	---	10 ± 2	10.7 ± 1.3	(179)	8 - 14.3	11 ± 2	(11)	10.8 ± 1.5	(77)	10.8 ± 1.5	(14)	13.0 ± 2.5	(14)	10.1 ± 1.2	(5)	PAA	13.0 ± 1.3	(7)	SSNS	11.9	(1)	FAE			
AS	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
AS	ug/9	---	10.7 ± 1.3	(179)	10.3	8 - 14.3	11 ± 2	(11)	10.8 ± 1.5	(77)	10.8 ± 1.5	(14)	13.0 ± 2.5	(14)	10.1 ± 1.2	(5)	PAA	10.1 ± 1.2	(5)	NPOES	---	---	---			
AS	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
AS	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
AS	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
AS(111)	ug/9	---	4.9	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
Au	n9/9	---	1.4 ± 0.4	(18)	1.4	0.72 - 2	1.4	0.72 - 4	(18)	1.4 ± 0.4	(18)	1.4 ± 0.4	(18)	1.4 ± 0.4	(18)	1.4 ± 0.4	(18)	1.4 ± 0.4	(18)	1.4 ± 0.4	(18)	1.4 ± 0.4	(18)	1.4 ± 0.4		
B	ug/9	33 ± 3	33 ± 3	(36)	33	25.15 - 40	33.5	(2)	33	± 4	(11)	33	± 4	(11)	33	± 4	(11)	33	± 4	(11)	33	± 4	(11)	33	± 4	
B	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Ba	ug/9	44	43 ± 4	(46)	43	35 - 52	47.15	(2)	41 ± 6	(22)	43 ± 5	(10)	36.95	(2)	43 ± 5	(10)	43 ± 5	(10)	43 ± 5	(10)	43 ± 5	(10)	43 ± 5	(10)		
Be	ng/9	27 ± 10	24 ± 8	(7)	26	13.7 - 36	31	(2)	41 ± 6	(22)	16 ± 3	(3)	16 ± 3	(3)	16 ± 3	(3)	16 ± 3	(3)	16 ± 3	(3)	16 ± 3	(3)	16 ± 3	(3)		
Bi	ng/9	100	90 ± 40	(9)	100	30 - 160	44 ± 18	(3)	9.7 ± 1.2	(63)	8.4 ± 1.3	(13)	8.4 ± 1.3	(13)	8.4 ± 1.3	(13)	8.4 ± 1.3	(13)	8.4 ± 1.3	(13)	8.4 ± 1.3	(13)	8.4 ± 1.3	(13)		
Br	ug/9	10	9.5 ± 1.1	(53)	9.4	7.1 - 12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
C	%	---	46.1 ± 0.5	(6)	45.8	45.6 - 47	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Ca	%	2.09 ± 0.03	2.04 ± 0.12	(92)	2.04	1.74 - 2.29	1.99 ± 0.16	(10)	2.07 ± 0.16	(22)	2.05 ± 0.08	(21)	1.99 ± 0.15	(15)	2.05 ± 0.11	(6)	2.05 ± 0.11	(6)	2.05 ± 0.11	(6)	2.05 ± 0.11	(6)	2.05 ± 0.11	(6)		
Ca	%	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Cd	ng/9	110 ± 10	119 ± 22	(86)	120	70 - 190	123 ± 35	(47)	130 ± 40	(17)	152 ± 42	(12)	152 ± 42	(12)	152 ± 42	(12)	152 ± 42	(12)	152 ± 42	(12)	152 ± 42	(12)	152 ± 42	(12)		
Cd	ng/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Cd	ng/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Ce	ug/9	---	0.99 ± 0.12	(17)	0.98	0.82 - 1.25	1.01 ± 0.13	(15)	1.01 ± 0.13	(15)	1.01 ± 0.13	(15)	1.01 ± 0.13	(15)	1.01 ± 0.13	(15)	1.01 ± 0.13	(15)	1.01 ± 0.13	(15)	1.01 ± 0.13	(15)	1.01 ± 0.13	(15)		
Cl	ug/9	690	730 ± 40	(35)	730	630 - 810	605	(2)	720 ± 60	(23)	161 ± 37	(43)	190	(1)	767 ± 34	(5)	707 ± 19	(3)	PAA	638	(1)	ISE	735	(2)	TGGS	
Co	ng/9	200	160 ± 37	(49)	150	100 - 260	160 ± 34	(5)	160 ± 37	(43)	2.3 ± 0.4	(12)	2.3 ± 0.4	(12)	2.3 ± 0.4	(12)	2.3 ± 0.4	(12)	2.3 ± 0.4	(12)	2.3 ± 0.4	(12)	2.3 ± 0.4	(12)		
Cr	ug/9	2.6 ± 0.3	2.6 ± 0.3	(94)	2.6	1.9 - 3.3	2.5 ± 0.4	(18)	2.6 ± 0.3	(47)	2.6 ± 0.3	(47)	2.6 ± 0.3	(47)	2.6 ± 0.3	(47)	2.6 ± 0.3	(47)	2.6 ± 0.3	(47)	2.6 ± 0.3	(47)	2.6 ± 0.3	(47)		
Cr	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Cr	ng/9	40	38 ± 9	(20)	40	20 - 50	40 ± 13	(19)	40 ± 13	(19)	12.3 ± 1.8	(28)	12.4 ± 2.4	(22)	12.1	(1)	PAA	40	(1)	SSMS	2.4	(1)	OCPE	2.7	(1)	POL
Cs	ug/9	12 ± 1	12.0 ± 1.4	(164)	12	8.9 - 16	11.8 ± 1.1	(41)	12.2 ± 1.8	(39)	12.3 ± 1.8	(39)	12.4 ± 2.4	(22)	12.1	(1)	PAA	14.8 ± 2.4	(12)	DES	11	(1)	AEAF	150	(1)	TCGS
Cu	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Cu	ng/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Cu	ng/9	---	82 ± 23	(4)	80	53 - 110	73 ± 18	(3)	73 ± 18	(3)	29.5	(2)	29.5	(2)	29.5	(2)	29.5	(2)	29.5	(2)	29.5	(2)	29.5	(2)		
OY	ng/9	---	29.7 ± 1.5	(3)	30	28 - 31	24	(20)	20 - 31	24 ± 3	(20)	24 ± 3	(20)	24 ± 3	(20)	24 ± 3	(20)	24 ± 3	(20)	24 ± 3	(20)	24 ± 3	(20)			
Er	ng/9	---	24 ± 3	(20)	24	20 - 31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Eu	ng/9	---	38 ± 9	(20)	40	20 - 50	40 ± 13	(19)	40 ± 13	(19)	12.3 ± 1.8	(28)	12.4 ± 2.4	(22)	12.1	(1)	PAA	40	(1)	SSMS	2.4	(1)	CPAA	3.25	(2)	1CPMS
F	ug/9	4	3.9 ± 0.5	(10)	3.8	3.12 - 4.8	3.6	(1)	3.6	(1)	3.6	(1)	3.6	(1)	3.6	(1)	3.6	(1)	3.6	(1)	3.6	(1)	3.6	(1)		
F	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Fe	ug/9	300 ± 20	286 ± 28	(147)	290	213 - 348	270 ± 40	(23)	289 ± 23	(43)	278 ± 32	(27)	297 ± 36	(22)	318 ± 24	(3)	PAA	240 ± 60	(13)	OES	3.40	(2)	COLOR			
Fe	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Fe	ug/9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		

TABLE 1571-1: COMPILED DATA FOR NBS SRM 1571 ORCHARD LEAVES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS		Mean ± SD (n) Method	Mean (n) Method
			Mean ± SD	(n)			Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)		
Ga	ng/g	80	88 ± 9	(4)	86	78 - 100	---	88 ± 9	(4)	---	---	---	---	---	---	---	---	
Gd	ng/g	68 ± 43	(6)	81	1.64 - 111	---	61 ± 51	(5)	150	(1)	---	---	---	---	100	(1) SSMS	---	
Ge	ng/g	150	(1)	---	---	---	---	150	(1)	---	---	---	---	---	5.7 ± 0.3	(3) TGCS	5.98 (2) CB	
H	%	5.84 ± 0.26	(5)	5.91	5.54 - 6.1	---	---	---	---	---	---	---	---	11.4	(1) GRAV	---	---	
H2O-	%	11.4	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Hf	ng/g	30 ± 5	(6)	28	23 - 37	---	30 ± 5.0	(6)	140	(1)	---	170	(2) PAA	170	(2) PGT	132.5 (2) IDMS		
Hg	ng/g	155 ± 15	(87)	155	122 - 190	154 ± 16 (38)	160 ± 19 (46)	140	(1)	146	(1) FAE	157	(1) AF	161 (1) SSMS	161 (1) SSMS	---		
Hg	ng/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Ho	ng/g	16 ± 5	(4)	13	11 - 22	---	15 ± 6	(3)	---	---	---	---	20	(1) SSMS	---	---		
I	ng/g	186 ± 18	(9)	188	160 - 220	---	186 ± 18 (9)	---	---	---	---	---	---	---	---	---	---	
I-129	fCi/g	0.0060	(1)	---	---	0.0060 (1)	0.0060 (1)	---	---	---	---	---	---	---	---	---	---	
In	ng/g	1.6 ± 0.3	(4)	1.6	1.23 - 2	---	1.6 ± 0.3	(4)	---	---	---	---	---	---	---	---	---	
Ir	ng/g	15	(1)	---	---	15 (1)	---	15 (1)	---	---	---	---	---	---	---	---	---	
Y	%	1.47 ± 0.03	(83)	1.45	1.26 - 1.62	1.41 ± 0.04 (9)	1.45 ± 0.06 (32)	1.45 ± 0.13 (16)	1.48 ± 0.10 (12)	1.45	(2) PAA	1.45 ± 0.14 (11) OES	1.39 (1) CPAA	1.45 ± 0.11 (4) IANAA	1.45 (2) TCGS	1.45 (2) SSMS	1.45 (2) SSMS	
K	%	---	---	---	---	---	---	---	---	1.43	(1) FE	1.45 ± 0.11 (4) IANAA	1.32 (2) NM	1.32 (2) NM	1.15 (2) NM	1.15 (2) NM	1.15 (2) NM	
La	ug/g	1.17 ± 0.11	(30)	1.2	0.95 - 1.4	---	1.16 ± 0.13 (27)	---	---	---	---	800	(1) CPAA	---	---	---	---	
Mg	ng/g	600	700 ± 150 (5)	770	500 - 330	630 ± 170 (3)	770 (1)	770 (1)	770 (1)	770 (1)	770 (1)	770 (1)	770 (1)	770 (1)	770 (1)	770 (1)	770 (1)	
Lu	ng/g	5.1 ± 2.5 (7)	4	2.9 - 8.5	---	5.1 ± 2.5 (7)	---	5.1 ± 2.5 (7)	---	5.1 ± 2.5 (7)	---	5.1 ± 2.5 (7)	---	5.1 ± 2.5 (7)	---	5.1 ± 2.5 (7)	---	
Mg	ug/g	6200 ± 200	6050 ± 330 (71)	6100	5140 - 6800	5820 ± 320 (12)	6100 ± 400 (14)	5840 ± 470 (24)	5980	(2)	6125 ± 29 (4) PAA	6400 ± 400 (12) OES	6300 (1) CPAA	6700 (1) CPAA	6700 (1) CPAA	6700 (1) CPAA	6700 (1) CPAA	6700 (1) CPAA
Mg	ug/g	---	---	---	---	---	---	---	---	---	---	6500 ± 500 (4) 14MAA	6500 ± 500 (4) 14MAA	6500 ± 500 (4) 14MAA	6500 ± 500 (4) 14MAA	6500 ± 500 (4) 14MAA	6500 ± 500 (4) 14MAA	
Mg	ug/g	91 ± 4	89 ± 5 (139)	89.4	76 - 103	88 ± 5 (23)	90 ± 7 (44)	88 ± 7 (30)	90 ± 9 (25)	90 ± 9 (25)	90 ± 9 (25)	90 ± 9 (25)	90 ± 9 (25)	90 ± 9 (25)	90 ± 9 (25)	90 ± 9 (25)	90 ± 9 (25)	
Mn	ug/g	---	---	---	---	---	---	---	---	---	---	89 ± 2 (4) ASV	95 (1) AEAAF	95 (1) AEAAF	95 (1) AEAAF	95 (1) AEAAF	95 (1) AEAAF	
Mn	ug/g	300 ± 100	290 ± 70 (24)	280	200 - 410	320 ± 100 (4)	300 ± 50 (12)	220 ± 40 (6)	220 ± 40 (6)	220 ± 40 (6)	220 ± 40 (6)	220 ± 40 (6)	220 ± 40 (6)	220 ± 40 (6)	220 ± 40 (6)	220 ± 40 (6)	220 ± 40 (6)	
Mo	ng/g	---	---	---	---	---	---	---	---	---	---	4.00 (1) PAA	4.00 (1) PAA	4.00 (1) PAA	4.00 (1) PAA	4.00 (1) PAA	4.00 (1) PAA	
N	%	2.76 ± 0.05	2.72 ± 0.04 (16)	2.71	2.61 - 2.81	---	---	---	---	---	---	2.73 ± 0.02 (6) TIR	2.74 (1) COLOR	2.73 (2) NT	2.74 (1) COLOR	2.74 (1) COLOR	2.74 (1) COLOR	
N	%	---	---	---	---	---	---	---	---	---	---	2.74 ± 0.06 (3) TGCS	2.66 (2) CB	2.66 (2) CB	2.66 (2) CB	2.66 (2) CB	2.66 (2) CB	
N-15	atom %	0.3570	(1)	---	---	---	---	---	---	---	0.37	(1) HS	0.37 (1) HS	0.37 (1) HS	0.37 (1) HS	0.37 (1) HS		
Na	ug/g	82 ± 6	89 ± 15 (49)	87	74 - 140	125.5 (2)	91 ± 22 (33)	102 ± 25 (6)	102 ± 25 (6)	102 ± 25 (6)	102 ± 25 (6)	102 ± 25 (6)	102 ± 25 (6)	102 ± 25 (6)	102 ± 25 (6)	102 ± 25 (6)	102 ± 25 (6)	
Na	ug/g	---	---	---	---	---	---	---	---	---	---	84 ± 4 (3) PAA	116 ± 35 (5) OES	87 (1) CPAA	87 (1) CPAA	87 (1) CPAA	87 (1) CPAA	
Nb	ug/g	< 0.3	---	---	---	---	---	---	---	---	---	< 0.3	PAA	80.3 (2) FE	130 (1) SSMS	130 (1) SSMS	130 (1) SSMS	
Nd	ug/g	510 ± 130 (9)	480	320 - 765	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	500 ± 150 (7)	
Ni	ug/g	1.3 ± 0.2	1.3 ± 0.2 (59)	1.3	0.95 - 1.8	1.26 ± 0.14 (15)	1.4 ± 0.25 (10)	1.4 ± 0.3 (9)	1.3 ± 0.3 (10)	1.3 ± 0.3 (10)	1.3 ± 0.3 (10)	1.3 ± 0.3 (10)	1.43 ± 0.13 (3) PAA	1.48 ± 0.18 (5) PAA	1.48 ± 0.18 (5) PAA	1.48 ± 0.18 (5) PAA	1.48 ± 0.18 (5) PAA	1.48 ± 0.18 (5) PAA
P	ug/g	2100 ± 100	2000 ± 180 (56)	2000	1560 - 2400	2040 ± 90 (6)	2080 (2)	2000 ± 250 (26)	2050 ± 240 (5)	1980 ± 280 (9)	1980 ± 280 (9)	1980 ± 280 (9)	2120 ± 50 (4)	2120 ± 50 (4)	2120 ± 50 (4)	2120 ± 50 (4)	2120 ± 50 (4)	2120 ± 50 (4)
P	ug/g	---	---	---	---	---	---	---	---	---	---	2150 ± 240 (4)	2150 ± 240 (4)	2150 ± 240 (4)	2150 ± 240 (4)	2150 ± 240 (4)	2150 ± 240 (4)	

TABLE 1571-1: COMPILED DATA FOR NBS SRM 1571 ORCHARD LEAVES (cont.)

ELE	UNITS	NBS	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS Mean ± SD (n) Method	Mean (n) Method	
Pb	ug/g	45 ± 3	44 ± 3 (124)	44.7	37 - 54	44 ± 5 (54)	43 ± 2 (4)	45 ± 6 (19)	46 ± 4 (17)	45 ± 4 (5) PAA	37 ± 6 (6) SSMS	50 (1) AE±AF
Pb	ug/g	---	---	---	---	---	---	---	---	45.4 ± 1.5 (7) ASV	43.5 (2) ICPMS	49.5 (2) 14NAA
Pb	ug/g	---	---	---	---	---	---	---	4.3 (1) POT	4.7 (1) IDHS	57 (1) CPAA	
Pb	ug/g	---	---	---	---	---	---	---	44.4 ± 0.6 (6) POL	46.9 ± 1.8 (3) DCFES	41.8 (1) HPLC	
Pd	ng/g	---	< 1	---	---	---	< 1	---	---	---	---	---
Pr	ng/g	---	84 ± 26 (4)	65	60 - 270	---	---	---	---	60 (1) SSMS	---	---
Pt	ng/g	---	430 ± 670 (3)	89.2	0.2 - 1200	430 ± 670 (3)	---	---	---	---	---	---
Rb	ug/g	12 ± 1	11.4 ± 1.2 (67)	11.28	8.5 - 14.8	11.5 (1)	11.5 ± 1.2 (37)	---	11.3 ± 1.4 (18)	12.7 ± 0.3 (3) PAA	10.9 ± 1.3 (6) SSMS	11.4 (2) 14NAA
S	ug/g	1900	2040 ± 240 (31)	1960	1660 - 2600	---	1930 ± 90 (3)	2050 ± 330 (10)	2400 (1) FE	1960 ± 50 (7) CB	2000 (1) IC	
S	ug/g	---	---	---	---	---	---	---	1980 (2) NH	1900 ± 400 (3) TCFS	1690 (1) TITR	
S	ug/g	---	---	---	---	---	---	---	1860 (1) COLOR	2600 (2) CPAA	2400 (1) TURB	
Sb	ug/g	2.9 ± 0.3	2.9 ± 0.3 (78)	2.9	2.3 - 3.5	2.9 ± 0.4 (5)	2.9 ± 0.3 (51)	2.8 ± 0.4 (5)	3.30 ± 0.15 (4) PAA	2.3 (1) SSMS	3.5 (1) AF	
Sb	ug/g	---	---	---	---	---	---	---	---	2.7 (1) 14NAA	3.2 (1) GCMES	
Sc	ng/g	---	63 ± 14 (31)	65	40 - 90	---	64 ± 13 (30)	---	---	110 (1) SSMS	---	
Se	ng/g	80 ± 10	81 ± 10 (96)	80	55 - 110	80 ± 15 (6)	86 ± 17 (54)	70 ± 8 (6)	77 ± 1 (3) GC	82 ± 6 (10) FLUOR	80 (1) SSMS	
Sr	ng/g	---	---	---	---	---	---	---	83 (2) ASV	83 (1) DCFES	83 (1) GCMES	
Si	ug/g	---	550 ± 110 (6)	480	475.8 - 750	---	570 ± 160 (3)	---	4.80 (1)	24.00 (1) SSMS	750 (2) 14NAA	
Sm	ng/g	---	114 ± 20 (21)	110	88 - 150	---	113 ± 18 (18)	---	---	140 (2) TCFS	90 (1) SSMS	
Sn	ng/g	---	290 ± 60 (7)	290	180 - 375	---	293 ± 10 (3)	260 (2)	---	375 (1) COLOR	230 (1) SSMS	
Sr	ug/g	37 ± 1	36 ± 3 (53)	36	28 - 44.2	34 (1)	38 ± 3 (13)	35.8 ± 2.4 (10)	35 ± 4 (17)	34 ± 4 (4) PAA	34 ± 11 (3) OES	
Sr	ug/g	---	---	---	---	---	---	---	32.5 ± 1.8 (6) SSMS	36 (1) ICPMS	35.4 (2) 14NAA	
Ta	ng/g	---	8 ± 2 (4)	7	5 - 10	---	8 ± 2 (4)	---	---	---	---	
Tb	ng/g	---	13 ± 3 (9)	13	9 - 18	---	13 ± 3 (9)	---	---	---	---	
Te	ng/g	10	10.5 (2)	---	10 - 11	---	11 (1)	---	---	---	---	
Th	ng/g	64 ± 6	58 ± 12 (13)	59	40 - 85	---	58 ± 12 (13)	---	---	---	---	
Ti	ug/g	---	20 ± 7 (18)	19.3	6.6 - 30	24 (1)	40 (1)	8 ± 2 (3)	23 ± 5 (3)	28 (2) 14NAA	20 ± 4 (8) SSMS	
Tl	ng/g	---	36 ± 3 (6)	34	32 - 40	38 (2)	---	---	---	33 (2) ASV	---	
Tm	ng/g	---	7 ± 3 (3)	7	3.72 - 10	---	5.36 (2)	---	---	10 (1) SSMS	---	
U	ng/g	29 ± 5	29 ± 3 (21)	30	25 - 34.3	---	29 ± 3 (16)	---	28 ± 3 (3) PAA	28 (1) NT	30 (1) IDMS	
V	ng/g	---	500 ± 110 (38)	500	300 - 700	370 (1)	500 ± 105 (29)	500 ± 60 (3)	---	480 (1) COLOR	670 (2) SSMS	
W	ng/g	---	30 ± 20 (3)	20	16 - 50	---	30 ± 20 (3)	---	---	---	---	
Y	ng/g	---	480 (1)	---	---	---	---	---	480 (1)	480 (1)	480 (1)	
Yb	ng/g	---	25 ± 5 (10)	21	20 - 34	---	25 ± 5 (9)	---	---	25.5 (2) AE±AF	25.5 (2) POL	
Zn	ug/g	25 ± 3	25 ± 2 (188)	25.3	19 - 32	26 ± 3 (43)	26 ± 3 (55)	25 ± 3 (36)	25 ± 3 (23)	28 ± 6 (11) OES	28 (1) DCFES	
Zn	ug/g	---	---	---	---	---	---	---	24.7 ± 1.9 (3) ASV	24 ± 2 (8) SSMS	28 (1) FAE	
Zr	ug/g	2.0 ± 1.1 (7)	1.7	0.4 - 3.8	---	1.85 (2)	---	---	1.5 (2) PAA	0.4 (1) SSMS	3 (1) 14NAA	
Zr	ug/g	---	---	---	---	---	---	---	3.8 (1) CPAA	---	---	

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>						<u>Al (ug/g) cont.</u>				
<	20	L	ITNA	74RAN 02		398	24		ITNA	82EHM 01
<	100		OES	75BOL 02		405		11	SSMS	85VOS 01
13	5		RTNA	80SLO 01		407	11	6	ITNA	74HOF 01
620	60		RTNA	74CAR 03		420	58		ITNA	77HAM 01
14000	1000		ITNA	84GIB 01		430			CPAA	80HAN 01
						430	40		ITNA	74RAN 02
						440			RTNA	72MOR 03
						460	7		VV	81NON 01
<u>Al (ug/g)</u>						460	33		ITNA	79KOB 03
99			OES	75JON 02		470		35	ITNA	81GLA 03
103	22	6	ITNA	74HOF 01		472	20		ITNA	84NDI 01
110	140	R	AA	75MAN 01		488			CPXRF	84KAU 01
123	11	11	ICPES	81MUN 01		500			ITNA	80CRE 01
128			OES	75JON 11		520	180		FAA	77FUJ 01
137.2	16.3	6	COLOR	85BAR 01		824	50		ITNA	80SLO 01
140	8		ICPES	81BLA 02						
146	20		ICPES	79ABE 01						
151.6	8.9	6	COLOR	85BAR 01						
157			ICPES	78CAP 01						
165			OES	75JON 07		1.1			ITNA	78KEL 02
187	27		ICPES	84ABD 01		3.5	1.6		CPXRF	80KIR 01
196			OES	75JON 06		7.5			SSMS	81VER 02
201			OES	75JON 01		8	1		PAA	80SEG 01
223			OES	75JON 09		8.5	0.3		HAA	74LOO 01
231			OES	75JON 04		8.66	1.25		ITNA	79REN 03
241	7	11	ICPES	81MUN 01		8.7	0.2		RTNA	73HEY 01
243			OES	75JON 08		8.8	0.4		ICPES	80HAA 01
251			ICPES	81GOO 01		8.9	2.2		ICPES	81NAD 01
255			OES	75JON 05		9			RTNA	75ABU 01
278			OES	75JON 10		9	0.4	H	ICPES	79ROB 01
296	30		ITNA	77ZIK 01		9.1		1	IENA	79KUC 01
322	18	11	ICPES	82JON 01		9.2			ITNA	79KUC 01
322	22		14NAA	81WIL 01		9.25	0.44		ITNA	84NDI 01
330			NAA	77LAU 01		9.27			HAA	77IHN 01
333			ITNA	76BAT 01		9.3		35	HAA	77TAM 01
337			ICPES	84NAD 01		9.4	0.5		HAA	84NAR 01
343	460	RD	ITNA	79IMA 03		9.4	1		HAA	76VIJ 02
343	460	R	ITNA	79IMA 01		9.5			HAA	85IKE 01
347	7.5		POL	72MAI 01		9.5			HAA	81INU 01
347	7.5		POL	77MAI 01		9.5			AA	83ELA 01
349.7	6.1		ITNA	77GOO 01		9.5	0.2		RTNA	83DAN 01
350			ITNA	78LAU 02		9.5	0.3	11	HAA	81RAP 01
359	4		IENA	79JON 01		9.5	0.5		HAA	85NAR 01
372	20		IENA	85GLA 02		9.5	0.5		RTNA	80SLO 01
377	21		ICPES	79MCQ 01		9.5	0.76		RTNA	79HEI 04
377	62		ICPES	85LIE 02		9.5	0.8		RTNA	79ROS 02
378	13		ITNA	75RIC 01		9.58	2.25		ITNA	85MAD 01
380			ITNA	84GLA 02		9.6			FAA	82HEI 01
380	100		14NAA	81WIL 02		9.6	0.3	11	HAA	81RAP 01
383			ITNA	78CAP 01		9.6	0.4		HAA	85YAM 01
390	50		AA	79MCQ 01		9.6	0.5		AA	83RAP 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>As (ug/g) cont.</u>						<u>As (ug/g) cont.</u>				
9.68	0.14		NAA	74HEY 01		10.14			ASV	78DAV 01
9.7		11	HAA	82CRO 03		10.2		35	XRF	77TAM 01
9.7	0.12		RTNA	72BYR 01		10.2			HAA	80HON 01
9.7	0.2		RTNA	73DAM 01		10.2	0.2		RTNA	85TIA 01
9.7	0.2		HAA	83MAH 01		10.2	0.2		HAA	77SMI 01
9.7	0.3		RTNA	79KAN 02		10.2	0.2		COLOR	77BUR 01
9.7	0.3		HAA	83MAH 04		10.2	0.5	7	RTNA	80GAL 02
9.7	0.4	7	RTNA	80GAL 02		10.2	1		PAA	74CHA 01
9.7	0.4	7	RTNA	77GIL 03		10.2	1		NAA	77JER 01
9.7	0.4		RTNA	78GAL 01		10.3			HAA	81ARA 01
9.7	0.4		ITNA	75RIC 01		10.3			FAA	82PER 02
9.76	0.17		RTNA	79HOE 01		10.3	0.2		HAA	80AGE 02
9.8			HAA	84IKE 01		10.3	0.2	34	HAA	78FLA 01
9.8	0.1		HAA	81KNA 01		10.3	0.4	7	RTNA	77GIL 03
9.8	0.1	11	HAA	81RAP 01		10.3	0.4	7	RTNA	80GAL 02
9.8	0.3		RTNA	82COR 01		10.3	0.9		ITNA	81KOS 01
9.8	0.4	H	ICPES	81PIC 01		10.3	1.6		RTNA	79REN 01
9.8	0.9		COLOR	76VIJ 02		10.4	0.4		ITNA	78LAU 02
9.8	0.9		ESCA	78CAR 01		10.43	0.22		HAA	81UTH 01
9.8	3.2		XRF	78STA 02		10.5			ITNA	82AKA 01
9.85			HAA	84YAM 01		10.5		1	IENA	79KUC 01
9.9			FAA	83XIA 01		10.5			HAA	83KUM 01
9.9	0.1		IENA	78WAN 01		10.5	0.6		HAA	85NAR 03
9.9	1.3		RTNA	85GAU 04		10.5	1		PAA	76KAT 04
9.9	1.6		ICPES	85LIE 02		10.6			ASV	81LEE 01
9.93	0.13		ITNA	73DAM 01		10.6	0.3		14NAA	81WIL 01
9.98	0.31		HAA	80TAM 01		10.6	0.5		14NAA	81WIL 02
10			RTNA	79BYR 01		10.6	0.6	6	HAA	81KAH 01
10		11	HAA	82CRO 03		10.6	0.8		EXRF	73GIA 01
10			HAA	79PEA 01		10.6	0.8		RTNA	74ORV 01
10			RTNA	72MOR 03		10.7	0.4		FAA	78HAY 01
10.0	0.1	6	HAA	81KAH 01		10.7	1	6	ITNA	74BEC 01
10.0	0.1		VV	81NON 01		10.8		6	NAA	78GAN 01
10.0	0.1		ICPES	84LIV 01		10.8			FAA	78CAP 01
10.0	0.1		FAA	79PET 01		10.8			HAA	81BRO 01
10.0	0.4		RTNA	78GIL 01		10.8			IENA	84GLA 02
10	1	6	ICPES	85ABD 01		10.8	0.5		IENA	82GLA 02
10	1		EXRF	80DYC 01		10.8	0.9		RTNA	76MEL 01
10	2		COLOR	79MCQ 01		10.82	0.25		HAA	77YAS 02
10	2		MPOES	83SAR 01		11			ICPES	79MCQ 01
10	2		ITNA	77MIN 01		11			ICPES	79MCQ 02
10	14	RD	ITNA	79IMA 03		11			ICPMS	83DOU 02
10	14	R	ITNA	79IMA 01		11.0	0.6		PAA	78HIS 01
10.1			ITNA	80CRE 01		11	1		PAA	76KAT 02
10.1	0.2	19	ITNA	74RAN 02		11	1		HAA	76FIO 01
10.1	0.3	7	RTNA	77GIL 03		11.0	1.5	7	RTNA	80GAL 02
10.1	0.3		RTNA	78WEE 01		11	2		RTNA	77KUS 01
10.1	0.3		ITNA	80GAL 02		11	2		ITNA	85WAH 01
10.1	0.4		IENA	81KOS 01		11.0	2.9		ITNA	84TU 01
10.1	0.8		EXRF	79GIA 01		11	3		ITNA	77ZIK 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>As (ug/g) cont.</u>										
11.5		11	SSMS	85VOS 01		14.1	1.5		SSMS	84VOS 01
11.5	0.3		GCMES	75TAL 01		14.3			XRF	78CAM 02
11.5	0.47		HAA	81YAN 01		14.3	0.4		EXRF	77NIE 01
11.5	0.5		HAA	81YAN 01		14.7	2		ITNA	83AHM 01
11.5	1.5		RTNA	73GOE 01		15	0.1		RTNA	77BAN 03
11.5	1.5	D	RTNA	74GOE 01		15.3	0.5		EXRF	73SPA 01
11.6			HAA	77SIE 01		15.3	1.6		SSMS	84VOS 01
11.6	0.27	H	HAA	76SIE 01		15.3	2		ITNA	79AHM 01
11.6	1.3		ITNA	74NAD 02		15.4	0.2	19	ITNA	74RAN 02
11.6	1.8		RTNA	79NIC 01		15.7	5		CPXRF	85CLA 01
11.7			NM	83MAR 03		16			AA	79HIL 01
11.8	0.8		SSMS	77DON 01		16	2		CPXRF	77CAM 01
11.9		H	FAE	79FEL 01		17			CPXRF	76ZEI 01
11.9	0.1		FAA	80DUP 01		17			CPAA	78MCG 01
11.9	0.2		ITNA	81HAB 01		19		6	ICPES	85ABD 01
11.9	0.6		ICPES	83OLI 01		26			AF	85NAR 02
11.98	0.08	H	ICPES	81PAH 01		38			EXRF	81PAR 01
12			ICPES	84MAR 01						
12			RTNA	74ERD 01						
12	0.38		HAA	82TAM 01						
12	0.6		AE+AF	82MAT 01		4.9			HAA	76AGG 01
12	0.6	11	HAA	82JON 01						
12	1		ITNA	76KUC 01						
12	1.5		RTNA	83BRA 01						
12	2		HAA	79STO 01		0.72	0.25		RTNA	84TJI 01
12	2.5		ITNA	77HAM 01		0.78	0.15		ITNA	79REN 03
12	2.6		EXRF	75REU 01		0.97	0.09		RTNA	77NAD 01
12	3		ITNA	81KUL 01		1			RTNA	72MOR 03
12.15	0.43		NAA	76GUZ 01		1	0.5		ITNA	82QUR 01
12.2	0.3		AA	84MAT 01		1.2		1	IENA	79KUC 01
12.3	0.2		ITNA	79KOB 03		1.4			ITNA	81KUL 01
12.3	0.4		RTNA	73TJI 01		1.4	0.3		ITNA	85MAD 01
12.4	1		ITNA	85NDI 01		1.4	0.5		IENA	81KOS 01
12.5		11	SSMS	85VOS 01		1.43	0.08		RTNA	82ZEI 01
12.7	0.7		ITNA	79JER 01		1.5			ITNA	79KUC 01
12.7	2		ITNA	82QUR 01		1.5	0.5		RTNA	77KUS 01
12.9	0.4	11	HAA	82JON 01		1.5	4	R*	RTNA	80SLO 01
12.9	2.3		SSMS	84VOS 01		1.6	0.2		RTNA	83SIR 01
13	0.1		ITNA	75BOL 01		1.64	0.1		ITNA	77MIN 01
13	1	H	ICPES	82HAH 01		1.8		1	IENA	79KUC 01
13	2.4		SSMS	84VOS 01		1.8	0.3		ITNA	81HAB 01
13	3		CPAA	77ZIK 01		2	0.8		ITNA	81KOS 01
13.2			CPXRF	75CAM 01		3.5	0.6		RTNA	74CAR 03
13.3			ICPES	85NAR 02		4.2			FAA	85BRO 01
13.3	0.4		HAA	76WAU 01						
13.4	0.93		COLOR	73LEB 01						
13.5			HAA	76AGG 01						
13.7			CPXRF	84KAU 01						
14	1		ITNA	78FUR 01						
14.1		6	NAA	78GAN 01						

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>B (ug/g)</u>						<u>Ba (ug/g) cont.</u>				
16	12		ITNA	82SCH 05		37		6	ICPES	83BRA 02
22.55		6	AE+AF	74DAU 01		37	11	5	ITNA	80TOU 01
23			OES	75JON 10		37.7		6	ICPES	83BRA 02
24	2		ICPES	79HER 01		37.9		6	ICPES	83BRA 02
25.15		6	AE+AF	74DAU 01		37.9		1	IENA	79KUC 01
27			OES	75JON 05		38			OES	75JON 05
27			OES	75JON 02		38	4.7		CPXRF	80KIR 01
30			OES	75JON 01		39.4			ITNA	79KUC 01
31	3		ICPES	84PRI 01		40		11	SSMS	85VOS 01
31.2	2.8		NM	79YAN 01		40			OES	75JON 03
31.5			ICPES	81GOO 01		40			NAA	77LAU 01
31.7			TCGS	84HIG 01		40	3	9	ITNA	78LAU 02
31.9	4.7	14	FAA	79SZY 01		41			RTNA	77GUI 03
32			OES	75JON 04		41	4		ITNA	79SAT 01
32			OES	75JON 09		42	2		ICPES	79MCQ 02
32	4		ICPES	79ABE 01		42	2		ICPES	79MCQ 01
32.2	0.4		TCGS	79AND 01		42	6		ITNA	78LAU 02
32.5	0.5		COLOR	79YAN 01		43			OES	75JON 11
32.8	2.3	6	TCGS	76GLA 01		43	3		ITNA	85WAH 01
33			OES	75JON 07		43	5.7		ITNA	77HAM 01
33			OES	75JON 06		43.9		1	IENA	79KUC 01
33	2	11	ICPES	79MIZ 01		44	5		SSMS	84VOS 01
33	4		CPAA	80HAN 01		44	57	R	AA	75MAN 01
33.2	0.1		TCGS	79FAI 01		44.3			AA	74BUS 02
33.3		11	COLOR	85SHI 02		44.8	2.5		IENA	81KOS 01
33.3	2.3	6	TCGS	76GLA 01		45			ITNA	78CAP 01
33.4		11	COLOR	85SHI 02		45			OES	75JON 04
33.4	0.7		ICPES	81KNA 01		45	1		ICPES	85LIE 02
33.5	2.8	11	ICPES	81MUN 01		45	6		VV	81NON 01
34	1	11	ICPES	79MIZ 01		45	7		SSMS	84VOS 01
34.8	0.9	11	ICPES	81MUN 01		45.3	2.7		ITNA	81KOS 01
35.1	9.9	14	FAA	79SZY 01		45.6	2.43		ITNA	85MAD 01
36			CPAA	81SAS 02		45.7			ICPES	84NAD 01
36			OES	75JON 03		46		6	ICPES	83CHA 01
36	3		CPAA	81SAS 01		46	6		ITNA	74RAN 02
36	5		CPAA	75MCG 01		47	3		ITNA	81KUL 01
37	3		ICPES	84SOB 01		47.3	2.7		ITNA	84TU 01
38			OES	75JON 11		48		6	ICPES	83CHA 01
38			OES	75JON 08		48	8		SSMS	84VOS 01
40	1	11	ICPES	79MIZ 01		50	14		FAA	86GAU 01
						51			RTNA	72MOR 03
<u>Ba (ug/g)</u>						51.3	4.5		PAA	74CHA 01
						51.9			ICPES	78DAH 01
0.3	0.1		CPXRF	77RIN 01		52			OES	75JON 01
14.7			SSMS	81VER 02		52	8		SSMS	84VOS 01
25.9	6.8		ITNA	81HAB 01		59.54	1.81		ITNA	79REN 03
28			ITNA	80CRE 01		62	21		ITNA	77ZIK 01
30			NAA	74BEL 01		80	22		14NAA	81WIL 02
35		11	SSMS	85VOS 01						
35.9	7		CPXRF	85CLA 01						

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Be (ng/g)</u>										
13.7	1.8	6	ICPES	82SCH 01		9.2			ITNA	80CRE 01
14.8	1.6	6	ICPES	82SCH 01		9.2	0.2		ITNA	74RAN 02
19	4		ICPES	85LIE 02		9.3	0.6		EXRF	73GIA 01
26	1		FLUOR	77WIC 01		9.3	1.4		RTNA	78WEE 01
26	3		FAA	86GAU 01		9.4			ITNA	79KUC 01
30	4		VV	74FLO 01		9.5		1	IENA	79KUC 01
36	4	11	FAA	750WE 01		9.5		1	IENA	79KUC 01
67	7	11	FAA	750WE 01		9.5			XRF	78CAM 02
110	10		GC	73BLA 01		9.5	0.8		RTNA	76MEL 03
						9.5	1		EXRF	77NIE 01
<u>Bi (ng/g)</u>										
						9.6	1.2	6	NAA	78GAN 01
						9.6	2.8		ITNA	77HAM 01
4	1	H	ICPES	81PAH 01		9.7	1.1		ITNA	78GIL 01
30			FAA	77BRU 01		9.8	0.78		ITNA	77STE 02
39			FAA	79INU 01		9.8	0.8		RTNA	79CRO 01
64			FAA	82HEI 01		9.8	1.1		CPXRF	85CLA 01
100		11	SSMS	85VOS 01		9.9	0.2		IENA	81KOS 01
100	10		HAA	85YAM 01		10	1		ITNA	76KUC 01
110	20		POL	72MAI 01		10	2.1		VV	81NOM 01
110	20		POL	77MAI 01		10	2.2		XRF	78STA 02
110	100		POL	74MAI 01		10.1	0.8		ITNA	77GUI 02
160			AF	85NAR 02		10.2	1		ITNA	81KUL 01
						10.5	0.6		ITNA	81KOS 01
<u>Br (ug/g)</u>										
						10.5	1.4		ITNA	79CRO 01
						10.6	1.5		ITNA	84TU 01
5	5		ITNA	77ZIK 01		10.8	0.4	35	NAA	81GLA 03
6.3	2		EXRF	77FLO 01		10.8	0.9	6	NAA	78GAN 01
6.6	0.4		EXRF	73SPA 01		10.9			ITNA	80SAT 01
6.6	0.4	5	IENA	79GLA 02		11			ITNA	78CAP 01
7.1			EXRF	81BIS 01		11	0.7	5	ITNA	80TOU 01
7.3	3.2		CPXRF	80KIR 01		11	1.2		ITNA	79KOB 03
7.3	9.3	R	ITNA	79IMA 01		11.5	1.5		ITNA	85WAH 01
7.3	9.3	RD	ITNA	79IMA 03		12	1.3		ITNA	79AHM 01
7.4	0.2		ITNA	75RIC 01		12	3		ITNA	77ZIK 01
7.8	0.3		EXRF	80DYC 01		12.1	1.3		ITNA	83AHM 01
8.2			RTNA	72MCR 03		12.5			ITNA	82AKA 01
8.2	0.6		ITNA	80SLO 01		34			EXRF	81PAR 01
8.3	0.5	5	ITNA	80HOE 01						
8.48	0.07	5	ITNA	80HOE 01		<u>C (%)</u>				
8.5	0.5	6	ITNA	74BEC 01		45.6	1.2		COUL	86CAH 01
8.6			ITNA	85MIS 01		45.76	0.51		CB	82GLA 02
8.7			ITNA	84GLA 02		45.8	1.3	35	CB	79GLA 04
8.8	0.6	5	IENA	79GLA 02		46	2		TCGS	79FAI 01
8.8	1.6		EXRF	75REU 01		46.35	0.31		CB	80SCH 02
8.87			CPXRF	84KAU 01		47	5	35	TCGS	79GLA 04
9.0	0.5		EXRF	79GIA 01		52	5		TCGS	79AND 01
9.0	0.5		ITNA	78LAU 02						
9.0	0.62		ITNA	84NDI 01						
9.1	0.5		ITNA	78WEE 01						
9.19	1.39		ITNA	79REN 03						

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ca (%)</u>					<u>Ca (%) cont.</u>					
0.9		11	SSMS	85VOS 01		2.04		OES	75JON 03	
1.58		35	AA	81GLA 04		2.04		AA	80URE 01	
1.6	2.26	R	ITNA	79IMA 01		2.04	0.02	11	AA	78GAI 01
1.6	2.26	RD	ITNA	79IMA 03		2.05		6	ICPES	83CHA 01
1.63			OES	75JON 07		2.05	0.9		XRF	78STA 02
1.69			AF	85DAV 01		2.06			COLOR	77HAM 04
1.69	0.05		CPXRF	85CLA 01		2.07	0.06		IENA	79JON 01
1.74			CPXRF	84KAU 01		2.07	0.06	11	ICPES	81MUN 01
1.74			OES	75JON 05		2.08		OES	75JON 11	
1.8			NAA	77LAU 01		2.08		OES	75JON 09	
1.8			OES	75JON 02		2.08	0.01		PAA	74CHA 01
1.81			ITNA	82AKA 01		2.08	0.02	11	AA	78GAI 01
1.81	0.24	5	ITNA	80TOU 01		2.08	0.04		ITNA	79KOB 03
1.83	0.07		CPXRF	80KIR 01		2.08	0.06		ICPES	79ABE 01
1.86	0.1		14NAA	77VAN 01		2.09	0.04	11	ICPES	81MUN 01
1.89		6	ICPES	83BRA 02		2.1			ICPES	81GOO 01
1.90	0.11		ITNA	79REN 03		2.1			ICPES	83KEI 01
1.91			AA	77BRU 01		2.1			RTNA	72MOR 03
1.91			OES	75JON 10		2.1	0.05		ITNA	81KOS 01
1.92			EXRF	81BIS 01		2.1	0.08	6	EXRF	79MAT 01
1.93	0.07		EXRF	79KUE 01		2.1	0.2		14NAA	80FAA 01
1.93	0.09		ITNA	77ZIK 01		2.1	0.2		ITNA	78LAU 02
1.94			OES	75JON 04		2.11			ICPES	81WEI 01
1.96	0.002	11	AA	75ISA 01		2.11			AA	79HIL 01
1.96	0.06		FE	78KOR 01		2.11	0.08	6	EXRF	79MAT 01
1.97		6	ICPES	83BRA 02		2.12	0.07		IENA	81KOS 01
1.97	0.03	11	ICPES	82JON 01		2.13			SSMS	81VER 02
1.97	0.05		PAA	76KAT 02		2.13			ITNA	76BAT 01
1.97	0.055		PAA	76KAT 04		2.13	0.09		ITNA	75RIC 01
1.97	0.08		TCGS	79AND 01		2.13	0.11		TCGS	79FAI 01
1.97	0.15		14NAA	81WIL 02		2.14		6	ICPES	83CHA 01
1.98	0.02		ICPES	85LIE 02		2.14	0.02		ITNA	78FUR 01
1.98	0.04	11	ICPES	82JON 01		2.14	0.11		ITNA	84TU 01
1.98	0.05		ICPES	79MCQ 02		2.145	0.017		CPXRF	81ROB 02
1.98	0.07		ICPES	79MCQ 01		2.15			COLOR	80LAU 01
1.98	0.08		EXRF	75REU 01		2.15			ITNA	78CAP 01
1.99			XRF	78CAM 02		2.17			OES	75JON 08
1.99	0.06		EXRF	77NIE 01		2.17	0.03		EXRF	80DYC 01
2.00			OES	75ISA 01		2.18	0.16		AA	82KAR 01
2.00	0.08		ITNA	80SLO 01		2.2			EXRF	81OHT 01
2.00	0.19		ICPES	85LYO 01		2.2	0.02		ICPES	79HER 01
2.01	0.02		AA	79MCQ 01		2.2	0.05		PAA	78HIS 01
2.01	0.18		RTNA	80CAN 01		2.2	0.1		ITNA	81KUL 01
2.02	0.002	11	AA	75ISA 01		2.21	0.15		ITNA	77HAM 01
2.02	0.11		EXRF	82DAK 01		2.23	0.12		ITNA	83AHM 01
2.03			COLOR	84OGU 01		2.26	0.58		ICPES	84ABD 01
2.03			ICPES	78DAH 01		2.28			CPAA	80HAN 01
2.03	0.02	11	ICPES	82JON 01		2.29			OES	75JON 06
2.03	0.04	11	ICPES	82JON 01		2.29	0.04		VV	81NON 01
2.04	0.06		CPAA	77ZIK 01		2.41			OES	75JON 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ca (%) cont.</u>					<u>Cd (ng/g) cont.</u>				
2.46	0.09	5	ITNA	80TOJ 01	116	10		FAA	84GLA 02
2.6			ICPES	84NAD 01	116	13		RTNA	80GRE 01
2.63			ICPES	78CAP 01	120			RTNA	85TIA 01
3.04	11		SSMS	85VOS 01	120			AA	84SAT 02
5.01			EXRF	81PAR 01	120		11	FAA	79HOE 02
					120			RTNA	74ROO 01
<u>Cd (ng/g)</u>					120	7		AA	83FAG 01
					120	10	11	ASV	84LOC 01
70			RTNA	80SLO 01	120	10	11	ASV	84LOC 01
70			FAA	73L00 01	120	10		IENA	81KOS 01
72	14		FAA	81ZAU 01	120	10		ASV	84LOC 01
90		6	AF	84NAR 02	120	10		RTNA	83BRA 01
90			AA	79HIL 01	120	10		RTNA	74ORV 01
90	10		FAA	80LEG 01	120	14		NAA	76GUZ 01
92	18		RTNA	73TJI 01	120	20	11	FAA	78SMI 01
95		11	FAA	79HOE 02	120	20	11	FAA	78SMI 01
100			AA	79NAR 01	120	30		AA	86GAU 01
100			FAA	80PRE 01	120	40	6	AA	84KAN 01
100		11	SSMS	85VOS 01	120	50		AA	82ROD 03
100	6		AF	84NAR 02	120	80	11	ICPES	82JON 01
100			AA	73L00 01	130			ICPES	84MAR 01
100	4		ASV	82SAT 02	130			ICPES	84OHL 01
100	10		ASV	85ADE 01	130			FAA	82HEI 01
100	10		POL	74MAI 01	130			ICPES	85NAR 02
100	20		AA	83RAP 01	130	5		FAA	74TAL 01
100	40		HAA	82WEI 01	130	5	7	AA	73TAL 01
105			FAA	82HOE 01	130	7		FAA	74TAL 01
105	5		FAA	79STO 01	130	7	7	AA	73TAL 01
105	10		FAA	84ROS 01	130	10		ICPES	85KUM 01
106	9		FAA	74RAI 02	130	20		ITNA	81KOS 01
108	8		AE+AF	74RAI 02	130	160	11	ICPES	81HUN 01
109	2		FAA	79DAB 02	135			FAA	84OHL 01
110			AF	85NAR 02	140			AA	83ELA 01
110			FAA	82PRE 01	140	40		FAA	82WEI 01
110			FAA	82AKA 01	150	50		AA	80AGE 01
110			RTNA	79BYR 01	150	50		AA	76GAL 01
110	6		AA	80SCH 05	150	60		TCGS	79AND 01
110	10	D	FAA	80SCH 08	160	10		ICPES	79HER 01
110	10		AA	82RIT 01	160	16		FAA	76URE 01
110	10		FAA	81KNA 01	160	50		RTNA	80VAL 01
110	10		ICPES	83SCH 04	160	70	11	ICPES	82JON 01
110	10		NAA	77JER 01	170			AF	78URE 02
110	10		PAA	74CHA 01	170	70	11	ICPES	82JON 01
110	10		AA	78RIT 01	180		16	AA	79ABO 01
110	10		AF	75EPS 01	190	40		FAA	77BRU 01
110	10		AA	75EPS 01	200	80		RTNA	76GAL 01
114	18		FAA	84GLA 11	200	100	11	ICPES	82JON 01
115	8		AA	84STO 01	230	20		FAA	73SEG 01
116	8	7	RTNA	80GAL 02	230	60		ITNA	74RAN 02
116	8		RTNA	78GAL 01	260	70	6	AA	84KAN 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cd (ng/g) cont.</u>						<u>Cl (ug/g) cont.</u>				
260	200		ICPES	85LIE 02		720	15		VV	81NON 01
350	20		ICPES	84ABD 01		720	25		ITNA	85WAH 01
370	10	6	ICPES	85ABD 01		720	140		PAA	76KAT 02
580		16	AA	79ABO 01		730	26		NAA	78GAN 01
660	340		AA	79MON 01		730	30		TCGS	79FAI 01
2000			AE+AF	79ULL 01		730	60		ITNA	80SLO 01
						732	29		ITNA	77GUI 02
<u>Ce (ug/g)</u>						732	29		NAA	76MIL 02
						739			ITNA	76BAT 01
0.75	0.067		ITNA	77HAM 01		740	30		TCGS	79AND 01
0.82		11	SSMS	85VOS 01		740	58		ITNA	77HAM 01
0.84	0.04		ITNA	81KOS 01		750			ITNA	74RAN 02
0.866	0.059		RTNA	83TJI 01		750	19		ITNA	75RIC 01
0.9		D	RTNA	82LAU 01		750	35		ITNA	77STE 02
0.9			RTNA	77LAU 02		755			ITNA	80CRE 01
0.91	0.06		RTNA	80SLO 01		760			ITNA	84GLA 02
0.92	0.14		ITNA	77NAD 02		770			XRF	78CAM 02
0.949	0.076		RTNA	86TSU 01		770	150		CPXRF	79REN 02
0.97			ITNA	79KUC 01		770	240		EXRF	77NIE 01
0.98	0.05		ITNA	78LAU 02		773	108		ITNA	84NDI 01
0.98	0.07		VV	81NON 01		790			RTNA	72MOR 03
1			RTNA	72MOR 03		800	40		IENA	79JON 01
1			NAA	77LAU 01		810	150		EXRF	80DYC 01
1.03	0.07		ITNA	84TU 01		838			ITNA	86GAU 01
1.05	0.33		RTNA	83SIR 01		950	70		14NAA	81WIL 02
1.1			SSMS	78URE 01				<u>Co (ng/g)</u>		
1.2	0.2		ITNA	81KUL 01						
1.25	0.41		ITNA	84ODD 01						
1.28	0.18		RTNA	84ODD 01		100			RTNA	72MOR 03
1.38	0.23		ITNA	85MAD 01		105	2		ASV	85ADE 01
						107	3		VOLT	84ADE 02
<u>Cl (ug/g)</u>						110	20	6	NAA	78GAN 01
						112	17		NAA	76GUZ 01
53			SSMS	81VER 02		120	50		AA	76GAL 01
400	770	RD	ITNA	79IMA 03		130			ITNA	78CAP 01
400	770	R	ITNA	79IMA 01		130			NAA	77LAU 01
510		35	ITNA	81GLA 03		130			ITNA	80CRE 01
580	27		FAA	78TSU 01		130			ITNA	79KUC 01
630	24		AA	78TSU 01		130	10	D	RTNA	74GOE 01
632	80		ITNA	77ZIK 01		130	10		ITNA	78LAU 02
638	27		ISE	81NAD 01		130	10		RTNA	73GOE 01
675			ITNA	78CAP 01		130	20	6	ITNA	74BEC 01
685	32		PAA	74CHA 01		130	20		RTNA	77KUS 01
687	32		ITNA	83LI 01		130	20		RTNA	83SIR 01
690			NAA	76GUZ 01		138	10		ITNA	74RAN 02
700	60	35	ITNA	81GLA 04		140			NAA	74BEL 01
706	26		ITNA	78FUR 01		140	10		ITNA	78GIL 01
715			CPXRF	84KAU 01		140	30	6	NAA	78GAN 01
717	193		PAA	76KAT 04		142	7		FAA	75HAG 01
719.5			ITNA	82AKA 01		145			ITNA	82AKA 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Co (ng/g) cont.</u>						<u>Cr (ug/g) cont.</u>				
150			ITNA	80SAT 01		2.0			AA	79MCQ 01
150		1	IENA	79KUC 01		2.0			ICPES	79MCQ 02
150	20	11	FAA	80FUD 01		2.0	0.13		GC-AA	76WOL 01
150	30		ITNA	76KUC 01		2.0	0.2	6	ITNA	74BEC 01
160	10		ITNA	82COR 01		2.05		11	AA	79HOE 02
160	20		RTNA	80SLO 01		2.2	0.2		ICPES	84SOB 01
170	10		ITNA	79KOB 03		2.2	0.3		RTNA	77MEL 01
170	10		ITNA	79SAT 01		2.2	0.4		VV	81NON 01
170	10		ITNA	84TU 01		2.2	1		CPXRF	80KIR 01
180			ITNA	85MIS 01		2.2	2.9	R	AA	75MAN 01
180		11	SSMS	85VOS 01		2.22	0.2		PAA	74CHA 01
180	20		RTNA	77MEL 01		2.23		6	NAA	78GAN 01
180	28		ITNA	77HAM 01		2.25		11	AA	79HOE 02
180	30		ITNA	81KUL 01		2.28		11	SSMS	85VOS 01
190	5	11	FAA	80FUD 01		2.33			CPXRF	84KAU 01
190	40		VV	81NON 01		2.37	0.07		SSMS	72MAG 01
190	100		ICPES	85LIE 02		2.4			RTNA	75ABU 01
198	61		ITNA	85MAD 01		2.4			ITNA	79KUC 01
200			AA	84SAT 02		2.4			AA	83ELA 01
210	20		ITNA	81KOS 01		2.4	0.1		ITNA	85WAH 01
210	20	6	ITNA	74BEC 01		2.4	0.1	11	ICPES	82JON 01
210	30		ITNA	85WAH 01		2.4	0.1	9	ITNA	78LAU 02
220	30		ITNA	82QUR 01		2.4	0.1		RTNA	76MEL 03
220	40		ITNA	78FUR 01		2.4	0.1		CHEML	74LI 01
230	30		ITNA	79AHM 01		2.4	0.3		ITNA	78LAU 02
230	30		ITNA	83AHM 01		2.4	0.36		ITNA	77HAM 01
230	50		IENA	81KOS 01		2.4	0.6		ICPES	81BLA 02
260	120	5	ITNA	80TOU 01		2.4	1.1		CPXRF	85CLA 01
290	100		ITNA	77ZIK 01		2.46	0.025		RTNA	74MCC 01
297	26		COLOR	82KIR 01		2.463	0.02	11	RTNA	78MCC 01
300			FAA	82HOE 01		2.47	0.14		FAA	75CAR 02
300	40		ITNA	76GAL 01		2.495	0.014	11	RTNA	78MCC 01
320		11	SSMS	85VOS 01		2.5			RTNA	72MOR 03
420	470		ITNA	75RIC 01		2.5			ITNA	85MIS 01
460	100		ITNA	79REN 03		2.5		11	SSMS	85VOS 01
680	80		ICPES	84ABD 01		2.5	0.4		ITNA	76KUC 01
800	600		XRF	78STA 02		2.5	1.6		EXRF	73GIA 01
						2.56	0.11		FAA	83CAR 02
<u>Cr (ug/g)</u>						2.574	0.01		ITNA	78MCC 01
						2.58	0.04		ITNA	81KOS 01
1.07	0.13	6	NAA	78GAN 01		2.59	0.15	7	FAA	80CHA 01
1.1	0.2	11	ICPES	81MUN 01		2.6		11	AA	79HOE 02
1.5			AA	73LOO 03		2.6	0.1		ITNA	79KOB 03
1.6	0.2	6	ICPES	85ABD 01		2.6	0.1	35	FAA	81GLA 03
1.9			POL	83HOL 01		2.6	0.2		NM	80SHI 01
1.9	0.3	11	ICPES	81MUN 01		2.6	0.2	6	ITNA	74BEC 01
1.9	0.3		ICPES	85LIE 02		2.6	0.3	11	ICPES	82JON 01
1.97	0.44		NAA	76GUZ 01		2.6	0.4		ITNA	78FUR 01
2.0			NAA	74BEL 01		2.64	0.2		ITNA	85NDI 01
2.0			ICPES	79MCQ 01		2.65	0.16	7	FAA	80CHA 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cr (ug/g) cont.</u>						<u>Cs (ng/g)</u>				
2.67	0.15	7	RTNA	80GAL 02		20			NAA	77LAU 01
2.67	0.15		RTNA	78GAL 01		24	3	9	ITNA	78LAU 02
2.7			ITNA	78CAP 01		28	5		ITNA	78LAU 02
2.7			AA	81ARA 01		28	5		ITNA	81KUL 01
2.7			FAA	82HOE 01		29	2		ITNA	74RAN 02
2.7	0.1		ITNA	84TU 01		32	8		ITNA	84TU 01
2.7	0.17		AA	80AGE 01		36	6		ITNA	84GLA 11
2.7	0.2		AA	83RAP 01		37	2		ITNA	84GLA 02
2.7	0.2		ITNA	79SAT 01		37.4	11		NAA	76GUZ 01
2.7	0.2		DCPES	79REE 01		38	7	6	ITNA	74BEC 01
2.7	0.2	D	DCPES	81REE 01		40		11	SSMS	85VOS 01
2.7	0.3		ITNA	82COR 01		40	9		VV	81NON 01
2.72	0.15		ITNA	84GIB 01		40	10		ITNA	79SAT 01
2.8			SSMS	81VER 02		42			ITNA	80CRE 01
2.8			NAA	77LAU 01		42	1		IENA	81KOS 01
2.8	0.2		ITNA	75RIC 01		44	2		ITNA	85GAU 04
2.8	0.2		ITNA	79AHM 01		48	4		ITNA	81KOS 01
2.8	0.2		ICPES	81KNA 01		49	9		ITNA	85MAD 01
2.8	0.2		ITNA	82QUR 01		50	6		ITNA	83AHM 01
2.8	0.2		ITNA	83AHM 01		50	10		ITNA	85WAH 01
2.8	0.4		ICPES	84ABD 01		80	10		RTNA	77MEL 01
2.8	0.4		ITNA	74RAN 02		150	60		ITNA	79REN 03
2.8	0.6		FAA	74WOL 01		300	50	7	RTNA	80GAL 02
2.82		7	FAA	80CHA 01						
2.9			RTNA	79TJI 01		<u>Cu (ug/g)</u>				
2.9			RTNA	78GOE 01						
2.9	0.3	D	RTNA	74GOE 01		3.6	1.3	6	ITNA	74HOF 01
2.9	0.3		RTNA	73GOE 01		8			EXRF	82KEE 01
2.9	0.4		EXRF	80DYC 01		8.1	2		EXRF	77FLO 01
2.9	0.4		SSMS	84VOS 01		8.4	0.8		ITNA	78FUR 01
2.92	0.28		ITNA	85MAD 01		8.9	1.7		FAA	77FUJ 01
3.0			ICPES	81GOO 01		9.4			EXRF	81BIS 01
3.0	0.2		AA	76GAL 01		9.5			ICPES	81GOO 01
3.0	0.3		SSMS	84VOS 01		9.6	0.8		XRF	85AVA 01
3.0	1		ITNA	77ZIK 01		9.6	1.7		EXRF	73SPA 01
3.1		6	ICPMS	83DOU 01		9.7		11	SSMS	85VOS 01
3.14	0.4		ITNA	81HAB 01		9.76	0.61	9	ITNA	77GAN 03
3.2	0.3		SSMS	84VOS 01		9.8	0.6	6	NAA	78GAN 01
3.2	0.3		ITNA	81KUL 01		9.8	0.6	6	NAA	78GAN 01
3.2	0.3		RTNA	76GAL 01		10			RTNA	72MOR 03
3.3			ITNA	80CRE 01		10	0.7		AA	78LIN 01
3.4		6	ICPMS	83DOU 01		10	1		XRF	78LIN 01
3.4	0.5		SSMS	84VOS 01		10	2		CPXRF	77CAM 01
3.4	0.5		ITNA	76GAL 01		10	2		AA	82HAR 01
3.67	0.01		ICPES	79HER 01		10.1	1.2		RTNA	83DAN 01
3.9	15		XRF	78STA 02		10.3			AA	76KRI 03
5.5	2.2		PAA	80YAM 01		10.3	0.5		FAA	82JEN 02
5.81	0.84		ITNA	79REN 03		10.3	0.6		AA	76GAL 01
						10.4	2.4		EXRF	75REU 01
						10.4	13.3	RD	ITNA	79IMA 03

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g) cont.</u>										
10.4	13.3	R	ITNA	79IMA 01		11.8	0.4		RTNA	85TIA 01
10.5	1		RTNA	80SLO 01		11.8	0.7		ITNA	79KOB 03
10.6	8		SSMS	84VOS 01		11.9		11	SSMS	85VOS 01
10.7	0.3	11	ICPES	81MUN 01		11.9	0.6		HPLC	83ICH 01
10.7	0.9		ITNA	85NDI 01		11.9	1.4		FAA	82GRO 01
10.8		6	NAA	72SIN 01		11.9	1.6		ASV	79BRI 02
10.8	0.8		SSMS	84VOS 01		12			AA	73LOO 03
11			AA	84SAT 02		12			AA	76FUK 01
11			ICPES	81WEI 01		12			XRF	78CAM 02
11			FAA	83ATS 01		12			FAA	73SEG 01
11			AE+AF	79ULL 01		12			AA	79HIL 01
11		1	AA	77FRY 01		12			CPAA	78MCG 01
11			OES	75JON 10		12			OES	75JON 02
11	0.1		ICPES	83SCH 04		12			CPXRF	76ZEI 01
11	0.8	7	RTNA	80GAL 02		12			AA	81ARA 01
11	1		ICPES	84SOB 01		12			ASV	83HOL 01
11	1		FAA	79KRA 01		12	0.2	11	ICPES	82JON 01
11	1		ICPES	79MCQ 02		12	0.3	6	ICPES	85ABD 01
11	1		RTNA	77KUS 01		12	0.4		ICPES	80SCH 08
11	1.5		AA	79MON 01		12	0.4	11	ICPES	82JON 01
11	15	R	AA	75MAN 01		12	0.5		AA	73TAL 01
11.1	1		RTNA	82COR 01		12	0.8	11	ICPES	82JON 01
11.2			VV	81NON 01		12	1		AA	79MCQ 01
11.2		6	ICPES	83BRA 02		12	1		ICPES	79MCQ 01
11.2	0.18		AA	80AGE 01		12	1		AA	77YAN 01
11.2	1	6	POL	72SIN 01		12	1		AA	78BRIT 01
11.2	1.3		ITNA	74RAN 02		12	1		RTNA	73GOE 01
11.3		16	AA	79ABO 01		12	1	D	RTNA	74GOE 01
11.3			ICPMS	85SCI 01		12	1.4		EXRF	77NIE 01
11.3	1		SSMS	84VOS 01		12	2		FAA	77LOR 01
11.3	2.3		XRF	78STA 02		12	2		RTNA	74CAR 03
11.4			ICPES	78CAP 01		12.1			AA	79ABO 01
11.43	0.2		RTNA	74RAV 01		12.1		6	ICPES	83BRA 02
11.5	0.5		RTNA	73TJI 01		12.1	0.2		ICPES	81KNA 01
11.5	0.6		FAA	84GLA 02		12.1	0.7		SSMS	84VOS 01
11.5	1		POL	74MAI 01		12.1	0.9		ITNA	79SAT 01
11.5	1		EXRF	79GIA 01		12.1	1.3		PAA	76WIL 01
11.6			FAA	78CAP 01		12.2	1.1		ICPES	79ABE 01
11.6	0.2		AA	75ABU 01		12.3	0.4		ICPES	85LIE 02
11.6	0.4		RTNA	78GAL 01		12.3	0.9		RTNA	76MEL 03
11.6	0.4		ICPES	81BLA 02		12.3	1.4		VV	80SCH 05
11.6	0.4	7	RTNA	80GAL 02		12.4	1.4		CPXRF	85CLA 01
11.6	0.6	11	ICPES	81MUN 01		12.4	1.4	11	ASV	84LOC 01
11.7	0.2	11	ICPES	82JON 01		12.4	1.6		RTNA	80VAL 01
11.7	0.4		AA	83RAP 01		12.4	1.9		RTNA	83SIR 01
11.7	1.7		CPXRF	81ROB 02		12.5		11	AA	79HOE 02
11.8		6	ICPMS	83DOU 01		12.5	0.5	11	ASV	84LOC 01
11.8			RTNA	79BYR 01		12.5	0.7		FAA	74WOL 01
11.8	0.3		RTNA	78GIL 01		12.5	0.8		VV	79STO 01
11.8	0.3	7	RTNA	80GAL 02		12.5	1.5		FAA	84ROS 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g) cont.</u>						<u>Cu (ug/g) cont.</u>				
12.6		6	ICPMS	83DOU 01		18.1			CPXRF	75CAM 01
12.6	0.6		EXRF	73GIA 01		18.3	6.9		XRF	77SMI 04
12.6	0.7		ASV	84LOC 01		19			ITNA	78KEL 02
12.62	0.85		NAA	76GUZ 01		20			OES	75JON 08
12.7		6	POL	72SIN 01		21	11		CPAA	77ZIK 01
12.9		6	AA	72SIN 01		27			OES	75BOL 02
13			OES	75JON 07		30			XRF	80SUZ 02
13		11	AA	79HOE 02		35			EXRF	81PAR 01
13		1	AA	77FRY 01						
13			ICPES	78DAH 01						
13			AA	83ELA 01						
13	0.1		EXRF	85COE 02		<	100	L	NAA	77LAU 01
13	0.47	11	AA	75ISA 01		53	8		ITNA	77NAD 02
13	1	35	RTNA	77GLA 01		80	7		RTNA	84ODD 01
13	1.7		AA	84KAN 01		86	3		RTNA	86TSU 01
13	4.2		CPXRF	80KIR 01		110			SSMS	78URE 01
13.1		6	ICPMS	83DOU 01						
13.1	0.4		ASV	85ADE 01						
13.1	0.6		AA	73THO 01						
13.2	0.5		SSMS	72MAG 01		<	100		RTNA	77LAU 02
13.3	0.1		ICPES	79HER 01		<	100	D	RTNA	82LAU 01
13.4		6	ICPES	83ERA 02		28	3		RTNA	86TSU 01
13.4	0.5	7	RTNA	84FAR 02		30			SSMS	78URE 01
13.5	0.6	7	RTNA	84FAR 02		31	4		RTNA	84ODD 01
13.5	1.5		ITNA	82QUR 01						
13.5	1.5		ITNA	79AHM 01						
13.6	0.5	7	RTNA	84FAR 02		20			ITNA	80CRE 01
13.7	1.3	6	EXRF	79MAT 01		20			SSMS	78URE 01
13.8	1.4		XRF	74REU 01		20	2		ITNA	78LAU 02
14			OES	75JON 03		21			RTNA	77LAU 02
14			OES	75JON 04		21		D	RTNA	82LAU 01
14			OES	75JON 11		21	1		ITNA	74RAN 02
14			CPXRF	84KAU 01		22	3		ITNA	79KOB 03
14		6	ICPES	85ABD 01		22	8		RTNA	80SLO 01
14	0.13	11	AA	75ISA 01		22.6	2.9		ITNA	85MAD 01
14	1		EXRF	80DYC 01		23	1		RTNA	83TJI 01
14	2		ITNA	77ZIK 01		24	4		ITNA	77NAD 02
14	4.5	6	ITNA	74HOF 01		25	3		ITNA	83AHM 01
14.5	1		FAA	82KRI 01		26			NAA	77LAU 01
14.5	4.7		ITNA	77HAM 01		26	1		IENA	81KOS 01
15			OES	75JON 05		26	5		ITNA	84TU 01
15			OES	75ISA 01		27	3		ITNA	81KOS 01
15.5			ITNA	82AKA 01		27	6		ITNA	81KUL 01
15.5			SSMS	81VER 02		28	1		RTNA	86TSU 01
16			ICPES	84NAD 01		28	6.3		ITNA	77HAM 01
16			OES	75JON 09		30	10		RTNA	83SIR 01
16			OES	75JON 01		31	4	6	ITNA	74BEC 01
16	1		ICPES	84ABD 01		35			ITNA	85MIS 01
17			OES	75JON 06		91	5		RTNA	84ODD 01
18	4		ICPES	82AZI 02		120	20		RTNA	77KUS 01
						300			RTNA	72MOR 03

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>F (ug/g)</u>					<u>Fe (ug/g) cont.</u>				
3.12			COLOR	79DAB 01	260	20		ITNA	78GIL 01
3.6			AA	77TSU 01	260	20		SSMS	84VOS 01
3.69			COLOR	79DAB 01	261			SSMS	81VER 02
3.7			DISE	83ESA 01	261	39.1	11	AA	75ISA 01
3.8	0.32		ISE	79DAB 01	262	5		ICPES	79HER 01
3.88			ISE	79DAB 01	265	54		RTNA	83SIR 01
4	0.3		ISE	82GLA 02	266	21		CPXRF	85CLA 01
4.2	0.4		ISE	84GLA 02	267			ICPES	78DAH 01
4.4	0.3		ISE	83KNA 01	267	2.9		CPXRF	81ROB 02
4.8	1		MS	77STE 02	267	6		ICPES	79MCQ 02
10			CPAA	80HAN 01	270			OES	75BOL 02
					270		11	SSMS	85VOS 01
<u>Fe (ug/g)</u>					270			ITNA	80CRE 01
121			CPXRF	76ZEI 01	271	6	11	COLOR	82SCH 03
121			CPAA	78MCG 01	271	7		RTNA	77MEL 01
145	4	11	AA	78GAI 01	272	16		AA	73THO 01
151			OES	75JON 09	273	6		ICPES	79MCQ 01
174			OES	75JON 06	274	19		EXRF	79GIA 01
183	22	11	ICPES	81MUN 01	276			OES	75JON 05
190			OES	75JON 02	276	8		EXRF	73GIA 01
190			OES	75JON 11	277	4		ICPES	85LIE 02
205	37		ITNA	81HAB 01	278	11		AA	79MCQ 01
213		6	ICPES	83BRA 02	279	79		RTNA	77KUS 01
213			OES	75JON 03	280			NAA	77LAU 01
220	6	11	AA	78GAI 01	280			AA	83ELA 01
225	58		XRF	77SMI 04	280	10		ITNA	78LAU 02
229			OES	75JON 08	280	26		ITNA	77HAM 01
229	22		XRF	78LIN 01	280	37		ICPES	84ABD 01
232			OES	75JON 04	282			COLOR	72SEI 01
235			AA	76FUK 01	282	21		14NAA	81WIL 02
235			ICPES	78CAP 01	282.3	9.4	11	ASV	84LOC 01
237	13		CHEML	72SEI 01	283	3	11	ICPES	82JON 01
238			AA	76KRI 03	283	23		ITNA	75RIC 01
239			OES	75ISA 01	284			AA	82WIL 04
240	24		SSMS	84VOS 01	285	5		RTNA	80SLO 01
240	330	R	AA	75MAN 01	285	5		ITNA	79DAS 01
245	35		ICPES	79ABE 01	285	9	11	COLOR	82SCH 03
246			FAA	78CAP 01	287			AA	79HIL 01
250			AA	73LOO 03	288	20		ICPES	80SCH 05
250		11	SSMS	85VOS 01	288	20	D	ICPES	80SCH 08
250	30		RTNA	74CAR 03	288.1	7.2	11	ASV	84LOC 01
250	42.5	11	AA	75ISA 01	290			FAA	73SEG 01
253			ITNA	80SAT 01	290			RTNA	72MOR 03
254	9		EXRF	80DYC 01	290	2		AA	84SAT 02
255	5	11	COLOR	82SCH 03	290	6	11	ICPES	82JON 01
256	1		AA	78LIN 01	290	12		PAA	74CHA 01
256	11	11	ICPES	82JON 01	290	15	7	RTNA	80GAL 02
258			ICPES	84NAD 01	290	25	6	NAA	78GAN 01
259			ITNA	78CAP 01	290	30		CPAA	77ZIK 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Fe (ug/g) cont.</u>										
290	30		ITNA	81KUL 01		313			ICPES	81WEI 01
290	30		ITNA	81KOS 01		313		6	ICPES	83BRA 02
290	35		IENA	81KOS 01		314	40		EXRF	75REU 01
290	58		SSMS	84VOS 01		315	25		RTNA	73GOE 01
291	19		EXRF	85COE 02		315	25	D	RTNA	74GOE 01
291	24		VV	81NON 01		316			OES	75JON 01
292		6	ICPES	83BRA 02		316			CPXRF	84KAU 01
292	10		AA	83RAP 01		317	25		ICPES	81KNA 01
293		6	ICPES	85ABD 01		318.4	26.9	6	ITNA	74BEC 01
293		11	AA	79HOE 02		319	32		XRF	74REU 01
293	14		EXRF	77FLC 01		320	25	6	NAA	78GAN 01
293	18		EXRF	79KUE 01		325			ICPES	81G00 01
294			QES	75JON 10		326			EXRF	82KEE 01
295		11	AA	79HOE 02		326	30		ITNA	77ZIK 01
295	14	11	ICPES	81MUN 01		331.5	118		PAA	76KAT 04
295.7	20.1		ITNA	82COR 01		332	84		PAA	76KAT 02
296			ICPES	83KEI 01		335			EXRF	810HT 01
296	8		ITNA	82QUR 01		335	14	6	EXRF	79MAT 01
296	8		ITNA	79AHM 01		335	40		ITNA	84NDI 01
296	12		ICPES	81BLA 02		338	16	6	EXRF	79MAT 01
297			AA	81ARA 01		340	28		AA	82HAR 01
297	6		ITNA	85WAH 01		343	6		SSMS	72MAG 01
297	10		FAA	82JEN 02		348	10		14NAA	81WIL 01
298	8		ITNA	83AHM 01		367			OES	75JON 07
298	30		ICPES	85LYO 01		370	45		CPXRF	77CAM 01
298.9	8.1		ASV	84LOC 01		422			CPXRF	75CAM 01
299	1		ITNA	79KOB 03		450	70		ITNA	79REN 03
300			NAA	74BEL 01		500			AE+AF	79ULL 01
300			EXRF	81BIS 01		884			EXRF	81PAR 01
300	14		COLOR	82MOR 01						
300	17	11	ICPES	82JON 01						
300	23		ITNA	84TU 01						
300	40		ITNA	76KUC 01		<	160	L	IENA	78WAN 01
300	45		ITNA	74RAN 02		<	500	L	EXRF	79GIA 01
300	50		14NAA	80FAA 01		78	25		NAA	76GUZ 01
301	2.5		EXRF	73SPA 01		86			RTNA	72MOR 03
301	8		ICPES	84S0B 01		89.3	3.6		RTNA	80STU 01
303	32		ITNA	79SAT 01		100	10		RTNA	77KUS 01
304	30		ITNA	78FUR 01						
306			ITNA	79KUC 01						
306	6		EXRF	77NIE 01						
309	17		ITNA	85MAD 01		1.64	0.24		ITNA	77NAD 02
310			ITNA	85MIS 01		12	1		RTNA	8400D 01
310			XRF	78CAM 02		81	10		RTNA	86TSU 01
310	31		SSMS	84VOS 01		100		D	RTNA	82LAU 01
310	54		FAA	77FUJ 01		100			RTNA	77LAU 02
311.1	10.4		NAA	76GUZ 01		100			SSMS	78URE 01
312	11		POL	74MAI 01		111	38		RTNA	83TJI 01
312	11.4		POL	72MAI 01						
312	11.4		POL	77MAI 01						

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ge (ng/g)</u>										
										Hg (ng/g) cont.
150	< 400	L H	EXRF ICPES	79GIA 01 82HAA 01		146	12		RTNA	82LO 01
						146	17		NAA	76GUZ 01
						148	10	7	RTNA	72HEI 01
						148	16		CVAA	82SUL 01
						150			AA	83ELA 01
5.54	0.08		TCGS	79FAI 01		150			CVAA	81NAR 01
5.6	0.1		TCGS	79AND 01		150	5		FAA	72LYO 01
5.91	0.3		CB	82GLA 02		150	5.1		AA	84STO 01
6.05	0.07		CB	80SCH 02		150	10		RTNA	83BRA 01
6.1	0.1	35	TCGS	79GLA 04		150	10		FAA	83YAN 01
						150	17		CVAA	74FIT 01
<u>H2O- (%)</u>										
11.4		D	GRAV	85NAR 03		150	18		ITNA	82LIN 01
11.4			GRAV	84NAR 01		150	40		RTNA	83SIR 01
						151	7		RTNA	84DRA 01
						152	5	2	CVAA	79KNE 01
						152	6		RTNA	76MEL 01
<u>Hf (ng/g)</u>										
						152	6		CVAA	80TON 01
13			RTNA	80SLO 01		153	8		CVAA	80KOR 01
23			NAA	77LAU 01		153	14		FAA	75KOI 01
27			ITNA	80CRE 01		154	5		RTNA	74ORV 01
28	2		ITNA	85WAH 01		154	13		CVAA	76DOG 01
31	4		ITNA	78LAU 02		154	16	5	RTNA	80GRE 01
34			ITNA	85MIS 01		154	20	7	RTNA	80GAL 02
37	5		ITNA	74RAN 02		154	20		RTNA	78GIL 01
46	12		ITNA	85MAD 01		154	28		FAA	74CHU 03
						155	3		RTNA	72RAI 01
<u>Hg (ng/g)</u>										
						155	5.6		RTNA	72ROO 02
						155	6		RTNA	72ROO 01
110	30		RTNA	77BAN 03		155	6	11	CVAA	77TAG 01
120	10	D	RTNA	74GOE 01		155	13	5	RTNA	80GRE 01
120	10		RTNA	73GOE 01		155	15		RTNA	73TJI 01
120	10		CVAA	84BAR 02		157	1		AF	81EBD 01
120	20		RTNA	80SLO 01		157	20		CVAA	82GLA 02
122		11	CVAA	79HOE 02		158			ITNA	80SAT 01
122	28		ITNA	84TU 01		158			CVAA	84LAU 01
125			AA	74RIC 01		158			RTNA	74RIC 01
125			IDMS	74RIC 01		158	5		RTNA	72LYO 01
130			CVAA	80NAD 01		158	10		FAA	77GLA 03
130			CVAA	83MAR 05		158	16		RTNA	82LIN 01
138	2	11	CVAA	77TAG 01		159	21		CVAA	78MAT 01
140			ICPES	84MAR 01		160			RTNA	79DES 01
140	10		NAA	77JER 01		160	6		CVAA	72RAI 01
140	10		PAA	74CHA 01		160	10		ITNA	83AHM 01
140	10		ITNA	74FRI 01		160	12		FAA	74SIE 02
140	20		IDMS	72RAI 01		160	12		FAA	72ROO 01
141	9		SSMS	74ALV 01		160	20		FAA	79STO 01
142	27		CVAA	82DOO 01		160	20		CVAA	82CHA 01
146	6		UU	74FEL 01		160	20		FAA	82JEN 02
146	6		FAE	76CAV 01		160	30		RTNA	80VAL 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Hg (ng/g) cont.</u>						<u>I-129 (fci/g)</u>				
160	40	6	POT	82JAG 01		0.006	0.0028		RTNA	79BRA 01
160	70		ITNA	81KUL 01						
161	13		RTNA	75LIT 01						
162	10	7	RTNA	72HEI 01						
163	6	17	CVAA	77TAG 01		1.23	0.11		RTNA	74RAV 01
163	12		RTNA	82GRI 01		1.6	0.1		RTNA	78KOB 01
165	5	35	CVAA	81GLA 04		1.8	0.8		RTNA	77KUS 01
165	25		ITNA	85WAH 01		2	0.2		ITNA	85WAH 01
167			ITNA	74RIC 01						
168	10		ITNA	79AHM 01						
168	10		ITNA	82QUR 01						
170	12		CVAA	82LIN 01		15	3		RTNA	74CAR 03
175	5	17	CVAA	77TAG 01						
180	10		ITNA	78FUR 01						
180	20		ITNA	74RAN 02						
180	30		RTNA	77MEL 01		1.05	1.406 RD		ITNA	79IMA 03
180	40	6	POT	82JAG 01		1.05	1.41 R		ITNA	79IMA 01
190			ITNA	75RIC 01		1.11			OES	75JON 05
190	10		NAA	78GAN 01		1.19			OES	75JON 09
190	30	6	ITNA	74BEC 01		1.2	6		ICPES	83BRA 02
190	40		CVAA	77AND 01		1.229	0.018		CPXRF	81ROB 02
200	20		ITNA	81KOS 01		1.25	6		ICPES	83BRA 02
200	30		PAA	80SEG 01		1.26			OES	75JON 03
200	30		ITNA	81HAB 01		1.28			OES	75JON 11
200	80		ITNA	74GUI 01		1.3	0.2		14NAA	77SEG 01
203	11	17	CVAA	77TAG 01		1.33	0.01		ICPES	84ABD 01
210	50		ITNA	77ZIK 01		1.35	1	AA	78SZY 01	
240		17	CVAA	77TAG 01		1.35			OES	75JON 04
305	70		ITNA	75LIT 01		1.36	0.01	11	AA	78GAI 01
						1.37			ITNA	80CRE 01
						1.37	0.06		ITNA	74RAN 02
						1.37	0.06		ITNA	84NDI 01
11	1		RTNA	86TSU 01		1.37	0.14		IENA	79JON 01
13		D	RTNA	82LAU 01		1.374		1	AA	78SZY 01
13			RTNA	77LAU 02		1.38			OES	75ISA 01
20			SSMS	78URE 01		1.38	0.04		ITNA	75RIC 01
22	2		RTNA	84ODD 01		1.39			CPAA	80HAN 01
						1.4			ITNA	82AKA 01
						1.4			ICPES	84NAD 01
						1.4	6		ICPES	85ABD 01
100	50		PAA	78HIS 01		1.4			OES	75JON 02
100	50		PAA	77WIL 01		1.4	0.01	11	AA	78GAI 01
160	20		IENA	82SAT 01		1.4	0.06		ITNA	78LAU 02
167	10		RTNA	77ROO 01		1.4	0.098	6	NAA	78GAN 01
173.2	4.4		RTNA	80GVA 01		1.4	0.2	35	ITNA	81GLA 04
183	6	17	NAA	79HEC 01		1.41			OES	75JON 07
188	26		NAA	79BRA 01		1.41			AA	77BRU 01
190	70		IENA	84FAR 01		1.41	0.03		TCGS	79AND 01
192	10		RTNA	83TAK 02		1.41	0.09		CPXRF	85CLA 01
200	70		RTNA	77STE 02		1.42			EXRF	81BIS 01
220		17	NAA	79HEC 01						

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>K (%) cont.</u>									
1.42			ITNA	78CAP 01	1.57	0.08		EXRF	75REU 01
1.42	0.04		ITNA	81KOS 01	1.57	0.25		14NAA	81WIL 01
1.42	0.09		ITNA	76KUC 01	1.58	0.08	6	NAA	78GAN 01
1.42	0.23		ITNA	84TU 01	1.59			OES	75JON 10
1.43	6		ICPES	83BRA 02	1.62			OES	75JON 06
1.43	0.04		EXRF	79KUE 01	1.65			ITNA	84TU 03
1.43	0.06		FE	78KOR 01	1.66	0.8	6	EXRF	79MAT 01
1.43	0.07	11	ICPES	82JON 01	1.67	0.03	6	ICPES	85ABD 01
1.4375	0.0794		NAA	76GUZ 01	1.7	0.07		ICPES	79HER 01
1.44	0.0004	11	AA	75ISA 01	1.74	0.04		EXRF	80DYC 01
1.44	0.04		RTNA	76MEL 03	1.81	0.08	6	EXRF	79MAT 01
1.445	0.11		PAA	76KAT 04	3.89			EXRF	81PAR 01
1.45			ITNA	79KUC 01					
1.45			ICPES	79COO 01					
1.45			OES	75JON 01					
1.45	0.0003	11	AA	75ISA 01	0.7	0.1		ITNA	77ZIK 01
1.45	0.02		AA	82HAR 01	0.8	0.05		RTNA	80SLO 01
1.45	0.03	11	ICPES	81MUN 01	0.88	0.07		RTNA	83SIR 01
1.45	0.08		PAA	76KAT 02	0.89	1.25	R	ITNA	79IMA 01
1.46	0.02		ITNA	85WAH 01	0.89	1.25	RD	ITNA	79IMA 03
1.46	0.07		ITNA	83AHM 01	0.95			ITNA	79KUC 01
1.46	0.07		ITNA	79AHM 01	0.98			ITNA	80CRE 01
1.46	0.11		EXRF	82DAK 01	0.99	0.08	6	ITNA	74BEC 01
1.46	0.14		14NAA	80FAA 01	1.0			RTNA	77LAU 02
1.46	0.2		14NAA	81WIL 02	1.0			NAA	77LAU 01
1.47			NAA	77LAU 01	1.0			NAA	74BEL 01
1.47	0.02	11	ICPES	82JON 01	1.0		D	RTNA	82LAU 01
1.47	0.07	11	ICPES	82JON 01	1.1		11	SSMS	85VOS 01
1.47	0.1		ITNA	79REN 03	1.1	0.1		ITNA	78LAU 02
1.47	0.12		ITNA	79KOB 03	1.145	0.058		RTNA	86TSU 01
1.48			AA	79HIL 01	1.15	0.1		IENA	81KOS 01
1.48			ICPES	81WEI 01	1.17	0.15		ITNA	84TU 01
1.49	1		IENA	79KUC 01	1.18	0.09		ITNA	81KOS 01
1.49	0.03		ITNA	78GIL 01	1.2			RTNA	72MOR 03
1.49	0.04		TCGS	79FAI 01	1.2			ITNA	78CAP 01
1.49	0.194		ITNA	77HAM 01	1.2			SSMS	78URE 01
1.496	0.043		ITNA	78FUR 01	1.2	0.1		RTNA	76MEL 03
1.5			ITNA	78KEL 02	1.2	0.1		ITNA	81KUL 01
1.5			RTNA	72MOR 03	1.2	0.165		ITNA	77HAM 01
1.5			ITNA	76BAT 01	1.2	0.3		ITNA	83AHM 01
1.5	0.05	11	ICPES	81MUN 01	1.209	0.039		RTNA	83TJ1 01
1.5	0.08		VV	81NON 01	1.22	0.02		VV	81NON 01
1.51			CPXRF	84KAU 01	1.23	0.02		NM	85KAT 02
1.51			XRF	78CAM 02	1.23	0.05		ITNA	84NDI 01
1.51	0.06		CPXRF	80KIR 01	1.24	0.08		ITNA	79REN 03
1.51	0.06		EXRF	77NIE 01	1.24	0.18		ITNA	85MAD 01
1.54			OES	75JON 08	1.26	0.2		ITNA	85KAT 02
1.54	0.03		ITNA	80SLO 01	1.27			ITNA	85MIS 01
1.55	0.8		XRF	78STA 02	1.27	0.33		ITNA	84ODD 01
1.56	0.05	11	ICPES	82JON 01	1.3	0.1		ITNA	74RAN 02

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>La (ug/g) cont.</u>					<u>Mg (ug/g) cont.</u>				
1.4			NM	83KAT 01	5640	420		AA	86GAU 01
1.44	0.2		RTNA	84ODD 01	5700			OES	75JON 05
1.7	0.6		RTNA	77KUS 01	5700	60		ICPES	79MCQ 02
1.96	0.02		ITNA	77NAD 02	5700	80		ICPES	79MCQ 01
					5800	100	11	AA	78GAI 01
<u>Li (ng/g)</u>					5800	300		ICPES	85LYO 01
					5800	730		ITNA	77HAM 01
<	900	L	CPAA	81SAS 01	5900			ICPES	84NAD 01
500	80		AA	84GLA 11	5900	1	11	AA	75ISA 01
510	660	R	AA	75MAN 01	5900	300		AA	84GLA 11
570	70		AA	84GLA 02	5922	172	11	ICPES	81MUN 01
770	30		ITNA	77HEY 01	5960			CPXRF	84KAU 01
800	200		CPAA	80HAN 01	5980	70	11	ICPES	82JON 01
830			AA	85GAU 04	6000			RTNA	72MOR 03
13700	1500		NT	74CAR 02	6000			OES	75JON 09
14000	1000		RTNA	85YAN 01	6000			OES	75JON 07
					6000	2	11	AA	75ISA 01
<u>Lu (ng/g)</u>					6000	100	11	AA	78GAI 01
					6000	200	11	ICPES	82JON 01
0.61	0.09		ITNA	77NAD 02	6000	500		14NAA	80FAA 01
0.9	0.1		ITNA	81KOS 01	6000	500		ITNA	78LAU 02
2.9	0.2		RTNA	83TJI 01	6000	500		CPXRF	80KIR 01
2.9	0.8		RTNA	86TSU 01	6100			OES	75JON 10
3.3		D	RTNA	82LAU 01	6100			AA	79HIL 01
3.3			RTNA	77LAU 02	6100			ICPES	83KEI 01
4	2		RTNA	83SIR 01	6100	100		PAA	74CHA 01
6			RTNA	80SLO 01	6100	200		PAA	78HIS 01
8.4	0.7		RTNA	84ODD 01	6100	200	11	ICPES	82JON 01
8.5	1.3		ITNA	83AHM 01	6100	400		ITNA	80SLO 01
10			SSMS	78URE 01	6100	1100		14NAA	81WIL 02
					6150			ICPES	78DAH 01
<u>Mg (ug/g)</u>					6150	70		PAA	76KAT 02
					6150	100		PAA	76KAT 04
4000	6250	R	ITNA	79IMA 01	6173.8	179		NAA	76GUZ 01
4000	6250	RD	ITNA	79IMA 03	6174	173		ITNA	75PIE 01
4900			ICPES	78CAP 01	6200			OES	75JON 02
4900		6	ICPES	83BRA 02	6200			OES	75JON 08
4915			ICPES	81GOO 01	6200		6	ICPES	83BRA 02
5140	190		VV	81NON 01	6200	100	11	ICPES	82JON 01
5300			FAA	78CAP 01	6200	200	6	ICPES	85ABD 01
5400			NAA	77LAU 01	6200	400		ICPES	84ABD 01
5400	100		ICPES	85LIE 02	6221	153	11	ICPES	81MUN 01
5500			AA	80URE 01	6258	315		ITNA	77ZIK 01
5500		6	ICPES	85ABD 01	6300			ITNA	78CAP 01
5500	300		ICPES	79ABE 01	6300	130		ITNA	78FUR 01
5500	300		IENA	79JON 01	6300	700		TCGS	79FAI 01
5600			AA	77BRU 01	6400			OES	75ISA 01
5600			ITNA	84TU 03	6400			ICPES	81WEI 01
5600		6	ICPES	83BRA 02	6500			OES	75JON 06
5600	100		AA	79MCQ 01	6500	100		COLOR	74SLE 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mg (ug/g) cont.</u>					<u>Mn (ug/g) cont.</u>				
6500	100		AA	82HAR 01	84			NAA	77LAU 01
6550	480		ITNA	79KOB 03	84	1	11	ICPES	82JON 01
6600			OES	75JON 11	84	4		ITNA	78LAU 02
6680			AF	85DAV 01	85			ITNA	78CAP 01
6700			CPAA	80HAN 01	85	2	11	ICPES	82JON 01
6700	100		ICPES	79HER 01	85	4		EXRF	80DYC 01
6800			OES	75JON 03	85	10	6	EXRF	79MAT 01
6800			OES	75JON 04	85.6	2.8	6	ITNA	74HOF 01
6800	1000		14NAA	77SEG 01	86			AA	76FUK 01
7000			ITNA	76BAT 01	86			ASV	80CHR 01
7030	170		14NAA	81WIL 01	86			RTNA	72MOR 03
7100			OES	75JON 01	86			ITNA	84GLA 02
7830			ITNA	75RIC 01	86		6	ICPES	83CHA 01
					86	1		ICPES	79MCQ 02
<u>Mn (ug/g)</u>					86	2		ICPES	79MCQ 01
					86	2		ICPES	83SCH 04
23.1	4.4	6	ITNA	74HOF 01	86	2	11	ICPES	82JON 01
32	16		EXRF	77FLO 01	86.5	4.9		EXRF	79GIA 01
52			OES	75JON 07	86.8	6.7		ICPES	85LYO 01
54	11		SSMS	84VOS 01	86.8	7.2	11	ICPES	81MUN 01
65	90	R	ITNA	79IMA 01	87		11	SSMS	85VOS 01
65	90	RD	ITNA	79IMA 03	87		11	AA	79HOE 02
68.2	8.2		XRF	77SMI 04	87			FAA	73SEG 01
71.8		6	ICPES	83BRA 02	87.1	1.6		RTNA	73HEY 01
72			OES	75JON 06	87.3	8.8		ICPES	82AZI 01
72	1	11	AA	78GAI 01	87.8	5.9		RTNA	74RAV 01
73.5			ITNA	82AKA 01	88			OES	75JON 02
76	10		ICPES	82AZI 02	88			OES	75JON 04
77			SSMS	81VER 02	88	1		AA	84SAT 02
79	3		RTNA	76MEL 03	88	2		AA	82HAR 01
80			AA	73LOO 03	88	3	7	RTNA	84FAR 02
80			ICPES	78CAP 01	88	3	7	RTNA	84FAR 02
80			OES	75JON 11	88	4		ICPES	85LIE 02
80			OES	75ISA 01	88	4.4	11	AA	75ISA 01
80	3		XRF	78LIN 01	88.2	3.4		PAA	74CHA 01
80.6	2.9		CPXRF	81ROB 02	88.6	2.2		EXRF	73GIA 01
80.7	3.3		ITNA	81HAB 01	88.8		11	AA	79HOE 02
81	4		RTNA	77KUS 01	89	0.6		ICPES	79HER 01
81.3			FAA	78CAP 01	89	1	11	ICPES	82JON 01
81.9		6	ICPES	83BRA 02	89	2.67	11	AA	75ISA 01
82		11	SSMS	85VOS 01	89	3	D	ICPES	80SCH 08
82			EXRF	82KEE 01	89	3		VV	80SCH 05
82	3		IENA	79JON 01	89	4		ITNA	74RAN 02
82	4.2		AA	78LIN 01	89	4		AA	79MCQ 01
82	7		EXRF	79KUE 01	89	4.4		ITNA	79KOB 03
82	99	R	AA	75MAN 01	89	5		ITNA	78GIL 01
82.7			ICPES	84NAD 01	89	5		FAA	84ROS 01
82.9	5.1		RTNA	83DAN 01	89	7		EXRF	85COE 02
83.3			ICPES	78DAH 01	89.4	1.4	11	ASV	84LOC 01
83.4			FAA	77SHE 02	89.9			ITNA	76BAT 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Mn (ug/g) cont.</u>										
90			ITNA	80CRE 01		96			ICPES	81HEI 01
90		6	ICPES	83BRA 02		96			ICPES	81GOD 01
90	0.9	11	AA	78GAI 01		96			OES	75JON 03
90	1		ITNA	80SLO 01		96	5		PAA	78HIS 01
90	3		ICPES	79ABE 01		96.2	4.8		AE	76GAL 01
90	4	7	RTNA	84FAR 02		96.8	3.6		PA	73THO 01
90	6		ITNA	76KUC 01		97			OES	75JON 00
90	7		ITNA	77HAM 01		97			CPXRF	84KAU 01
90	12		CPXRF	77CAM 01		97	10		ITNA	77ZIK 01
90	16		SSMS	84VOS 01		97.4			CPXRF	75CAM 01
90.9	4.7		ASV	84LOC 01		98			XRF	80SUZ 02
91			EXRF	81BIS 01		98	20		ICGS	79FAI 01
91	0.8	11	ASV	84LOC 01		98.9	11		CPXRF	85CLA 01
91	2		ITNA	85WAH 01		99	12		SSMS	84VOS 01
91	2	6	NAA	78GAN 01		100			ITNA	78KFL 02
91	4		FAA	79WES 01		101			OES	75JON 01
91	4		ICPES	84ABD 01		101	5		ICPES	84SOB 01
91.1	10.9		ITNA	85MAD 01		101	10		XRF	74REU 01
91.1	18		EXRF	75REU 01		103	5		VV	81NOK 01
91.5			AA	83FAG 01		104	9		ITNA	84N01 01
91.6	1.08		NAA	76GUZ 01		106	3	3	ICPES	85ABD 01
92			AA	76KRI 03		107			ITNA	84TU 03
92		6	ICPES	83CHA 01		107	3		SSMS	72MAG 01
92	1	D	DCPES	81REE 01		110			ITNA	79REN 03
92	1		DCPES	79REE 01		110	9	6	EXRF	79MAT 01
92	3		ITNA	78FUR 01		131			OES	75JON 08
92	3		ITNA	75RIC 01		144			OES	75JON 09
92	3		AA	83RAP 01		242			EXRF	81PAR 01
92	4	35	ITNA	81GLA 04						
92	17		SSMS	84VOS 01						
92.4	0.8		ICPES	81KNA 01						
92.8	4		ITNA	83AHM 01		110	80	11	ICPES	82JON 01
93			AA	83ELA 01		200		11	SSMS	85VOS 01
93			ITNA	80SAT 01		200			FAA	79BEN 01
93			XRF	78CAM 02		200	100	11	ICPES	82JON 01
93			OES	75JON 05		200	100	11	ICPES	82JON 01
93	6		EXRF	77NIE 01		200	200	11	ICPES	82JON 01
93	8		XRF	78STA 02		230	20		COLOR	83MAT 02
93.8	17.2		PAA	80YAM 01		240	20		RTNA	78HAD 01
94	3.5	6	NAA	78GAN 01		240	21		RTNA	82HAD 01
94.5	5		PAA	76KAT 04		250		1	TENA	79KUC 01
94.8	4		ITNA	79AHM 01		260	20		FAA	84GOK 01
94.8	4		ITNA	82QUR 01		270	9		RTNA	85TJA 01
95		6	ICPES	85ABD 01		280	20		ICPES	82LYO 01
95			AE+AF	79ULL 01		280	30		RTNA	83DAN 01
95	4		PAA	76KAT 02		300	30	D	RTNA	74GOE 01
95	7.3		CPXRF	80KIR 01		300	30		RTNA	72GOE 01
95	12		ITNA	79SAT 01		300	60		RTNA	77DIK 01
95.4	2.1		ITNA	76GAL 01		320		1	TENA	79KUC 01
95.7	2	11	ICPES	81MUN 01		320	60		RTNA	80SLG 01

TABLE 15.1-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mo (ng/g) cont.</u>					<u>Na (ug/g)</u>				
320	80		RTNA	84MOK 02	40			OES	75JON 03
327	70		NAA	76GUZ 01	45.8	6	11	ICPES	81MUN 01
390	40		FAA	81NEU 01	50.5	1	11	ICPES	81MUN 01
400	30		RTNA	83SIR 01	66	6		ICPES	85LIE 02
400	100		PAA	80SEG 01	74			OES	75JON 06
410			POL	83BOU 01	75			NAA	77LAU 01
410			AA	83BOU 01	76			NAA	74BEL 01
2260	210		PAA	74CHA 01	76	34	6	ICPES	85ABD 01
2300			OES	75JON 10	77			RTNA	72MOR 03
3300			OES	75JON 11	77	4		RTNA	76MEL 03
4000	2000		CPAA	77ZIK 01	77	6		ITNA	80SLO 01
4600			OES	75JON 03	78	3		ITNA	74RAN 02
6200			OES	75JON 01	78	5		ITNA	76KUC 01
10500			OES	75JON 07	79.2	1.8		ITNA	84NDI 01
15200			OES	75JON 02	79.3	5		PAA	74CHA 01
					80			ITNA	78LAU 02
<u>N (%)</u>					80			ITNA	84TU 03
					80	2		FE	81MIZ 01
2.59	0.11		CB	82GLA 02	80	3		ITNA	85WAH 01
2.61	0.05		14NAA	80FAA 01	80.6	1.3		FE	78KOR 01
2.62	0.03		CB	80SCH 02	81			ICPES	81GOO 01
2.7	0.01 11	TITR	82LIA 01		81			ITNA	79KUC 01
2.7	0.09 13	NT	74CAR 01		81	17		ITNA	78FUR 01
2.7	0.09	TCGS	79FAI 01		81.5	3		ITNA	79AHM 01
2.7	0.4 35	TCGS	79GLA 04		81.6	3		ITNA	83AHM 01
2.7	0.4	14NAA	77SEG 01		81.8	1.83		NAA	76GUZ 01
2.71	0.01	TITR	80GIN 01		82		1	IENA	79KUC 01
2.72		11	TITR	82LIA 01	83	5		ITNA	75RIC 01
2.74	0.01 11	TITR	82LIA 01		83	8.5		ITNA	77HAM 01
2.74	0.01	COLOR	80GIN 01		84	4		ITNA	78GIL 01
2.74	0.02 11	TITR	82LIA 01		84.4			ITNA	76BAT 01
2.75	0.03 11	TITR	82LIA 01		86	1		VV	81NON 01
2.755	0.038	GRAV	74CAR 01		86	5		ITNA	77ZIK 01
2.76	0.09 13	NT	74CAR 01		87			CPAA	80HAN 01
2.81	0.15	TCGS	79AND 01		87	11		PAA	76KAT 02
					87	16		PAA	76KAT 04
<u>N-15 (atom %)</u>					88	6.8		ITNA	79KOB 03
					88	142	R	ITNA	79IMA 01
0.367	0.002	MS	73CAR 01		88	142	RD	ITNA	79IMA 03
					89	17		AA	82HAR 01
					90	8		ITNA	81KOS 01
					92			ITNA	80CRE 01
					92		35	ITNA	81GLA 04
					93	14		ICPES	84ABD 01
					99.8	6.7		ITNA	85MAD 01
					100			OES	75JON 01
					100			OES	75JON 05
					101		6	ICPES	85ABD 01
					103.5			ITNA	82AKA 01
					110		35	ITNA	81GLA 03

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Na (ug/g) cont.</u>						<u>Ni (ug/g) cont.</u>				
114	2		NAA	78GAN 01		1.2	0.4		FAA	82GRO 01
120	40		ITNA	79REN 03		1.2	0.5		EXRF	79GIA 01
123			ICPES	84NAD 01		1.2	1		EXRF	77NIE 01
130		11	SSMS	85VOS 01		1.2	1		EXRF	85COE 02
140	12		ICPES	79ABE 01		1.24	0.07	11	ICPES	82JON 01
150			OES	75JON 04		1.264	0.052		FAA	84GRE 01
154			OES	75JON 09		1.27	0.08		ICPES	82JON 01
155			ITNA	78CAP 01		1.27	0.08		PAA	74CHA 01
162	1		AA	78SZY 01		1.28	0.16		NAA	76GUZ 01
170	30		IENA	79JON 01		1.3			AA	73L00 03
200			AA	77BRU 01		1.3	0.07		VOLT	81PIH 01
206	21		ICPES	84SOB 01		1.3	0.1		AA	84SAT 02
244	1		AA	78SZY 01		1.3	0.1		HPLC	83ICH 01
400			OES	75JON 11		1.3	0.1		RTNA	75ABU 01
524			OES	75JON 08		1.3	0.2	9	ITNA	78LAU 02
						1.3	0.4		EXRF	73GIA 01
<u>Nb (ug/g)</u>						1.3	0.5	11	ICPES	81MUN 01
<	0.3	L	PAA	78HIS 01		1.3	0.6		ICPES	84SOB 01
						1.31	0.11		ITNA	75PIE 01
						1.31	0.17		FAA	80DOR 01
<u>Nd (ng/g)</u>						1.32	0.02		ASV	85ADE 01
						1.33	0.07		VOLT	84ADE 02
320	90		ITNA	77NAD 02		1.36	0.11		FAA	86GAU 01
407	20		ITNA	84ODD 01		1.37	0.03		COLOR	77BUR 01
420	90		RTNA	83SIR 01		1.38			POL	85UTO 01
423	9		RTNA	84ODD 01		1.4			FAA	82HOE 01
480			SSMS	78URE 01		1.4			FAA	73SEG 01
570			RTNA	77LAU 02		1.4		1	IENA	79KUC 01
570	D		RTNA	82LAU 01		1.4	0.1		POL	72MAI 01
582	48		RTNA	86TSU 01		1.4	0.1		POL	74MAI 01
600		11	SSMS	85VOS 01		1.4	0.1		POL	77MAI 01
765	51		RTNA	83TJI 01		1.4	0.3		RTNA	77MEL 01
						1.4	0.4		XRF	78STA 02
<u>Ni (ug/g)</u>						1.4	0.6		ITNA	74RAN 02
						1.5	0.2		PAA	80SEG 01
0.7			CPXRF	75CAM 01		1.5	0.3		EXRF	80DYC 01
0.95	11		SSMS	85VOS 01		1.5	0.3		PAA	80YAM 01
1	1		IENA	79KUC 01		1.5	0.3		RTNA	80SLO 01
1.1	16		AA	79ABO 01		1.5	0.7		CPXRF	85CLA 01
1.1			AA	83ELA 01		1.6		11	SSMS	85VOS 01
1.1	0.1	6	ICPES	85ABD 01		1.6	0.4		AA	78RIT 01
1.1	0.5		AA	83RAP 01		1.7	0.1		DCPES	79REE 01
1.14	0.08		FAA	79STO 01		1.7	0.1		DCPES	81REE 01
1.15	0.07	11	ICPES	82JON 01		1.8			CPXRF	84KAU 01
1.15	0.09	11	ICPES	82JON 01		1.8			POL	83HOL 01
1.18	0.08		AA	80AGE 01		1.8	0.2		ICPES	79ABE 01
1.2			XRF	78CAM 02		2			NAA	77LAU 01
1.2			FAA	85LON 01		2.1	0.1		ICPES	79HOL 01
1.2	0.063	6	COLOR	78FUD 01		2.2	0.7		ICPES	79HOL 01
1.2	0.07	6	COLOR	78FUD 01		2.6	1		CPXRF	80KIR 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
<u>P (ug/g) cont.</u>				
2100			OES	75JON 02
2100			FAA	79EDI 01
2100			OES	75JON 09
2100	6	12	ICPES	83BRA 02
2100	80	12	FAA	78EDI 01
2100	100		14NAA	80FAA 01
2100	130	7	NM	81SHI 01
2110	110	7	NM	81SHI 01
2130	20		ICPES	79HER 01
2160	50	12	FAA	78EDI 01
2190	110	7	NM	81SHI 01
2200			EXRF	81OHT 01
2300			OES	75JON 08
2380	180		EXRF	75REU 01
2400			OES	75JON 03
2400	100	6	ICPES	85ABD 01
2400	200		ICPES	85LYO 01
2500	400		14NAA	77SEG 01
2600	6		ICPES	83BRA 02
2600	6		ICPES	85ABD 01
3100			OES	75JON 01
<u>Pb (ug/g)</u>				
15	5.1		CPXRF	80KIR 01
17.6			SSMS	81VER 02
24	7		SSMS	84VOS 01
26			AA	76FUK 01
26	7		SSMS	84VOS 01
28.5	3.6		FAA	77FUJ 01
31	2		ICPES	81NAD 01
33.6	1.5		FAA	77BRU 01
34	7		SSMS	84VOS 01
37			AA	73L00 03
37	8		SSMS	84VOS 01
37.3	7		XRF	78STA 02
38	3		FAA	77LOR 01
39	1		ASV	85ADE 01
40			AA	83ELA 01
40		11	SSMS	85VOS 01
40	2		EXRF	73SPA 01
40	3		AA	82ROD 03
40	4		PAA	78HIS 01
40.2		11	HAA	84KUM 01
40.7	3		EXRF	79GIA 01
41			ICPES	78DAH 01
41	0.6		ICPES	84ABD 01
41	1		ICPES	79HER 01
41	2		ICPES	85LIE 02
41	2		AA	84GLA 02

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Pb (ug/g) cont.</u>						<u>Pb (ug/g) cont.</u>				
41	3		AA	84SAT 02		45		6	FAA	81JAC 01
41.5			ICPES	85MAR 02		45	0.5		AA	73TAL 01
41.8	1.1		HPLC	83ICH 01		45	2		PAA	74LUT 01
42		6	ICPMS	83DOU 01		45	3.6		AA	79MON 01
42			ICPES	84MAR 01		45.1			CPXRF	84KAU 01
42			FAA	82HOE 01		45.1	2.5		AA	84STO 01
42		11	SSMS	85VOS 01		45.3			CPXRF	75CAM 01
42			FAA	78URE 02		45.3	0.7		FAA	79DAB 02
42	1		ICPES	79MCQ 02		45.3	0.9		FAA	81KIT 01
42	1.7		AA	80AGE 01		45.3	1.13		FAA	82VAN 01
42	3		ICPES	79MCQ 01		45.4	2		EXRF	73GIA 01
42	4		ITNA	77GUI 02		45.5	0.4	6	FAA	84FUD 01
42	4		NAA	76MIL 02		45.5	0.7	6	FAA	84FUD 01
42	9		14NAA	81WIL 02		45.5	1		RTNA	72GIB 01
42.1		11	HAA	84KUM 01		45.7	1.3		ASV	84LOC 01
42.2		11	FAA	79HOE 02		45.8		6	DCPES	84SNE 01
42.8	3.1	11	ASV	84LOC 01		45.9	0.14		FAA	79STO 01
42.9		11	FAA	79HOE 02		45.9	1.2	11	ASV	84LOC 01
43			FAA	80PRE 01		46		6	DCPES	84SNE 01
43			SSMS	74LUT 01		46			FAA	82PRE 01
43			EXRF	84PIN 01		46	1	11	ICPES	82JON 01
43	2		POT	84PIN 01		46	2		AA	77YAN 01
43.2	5.1		FAA	82JEN 02		46	2		FAA	79KRA 01
43.3			AA	76KRI 03		46	2		AA	80SCH 05
43.4		6	POL	72SIN 01		46	2	D	FAA	80SCH 08
43.7	0.9		HAA	76VIJ 01		46	52	R	AA	75MAN 01
44			FAA	79HEI 03		46.1	7		CPXRF	85CLA 01
44			FAA	73SEG 01		46.2	3.5	11	ICPES	81MUN 01
44	2		NAA	77JER 01		46.4			AA	74BOP 01
44	2		FAA	80LEG 01		46.5		16	AA	79ABO 01
44	2		AA	75ABU 01		46.5	1.3		XRF	85AVA 01
44	2	11	ICPES	82JON 01		46.8	5.6		HAA	82WEI 01
44	2.3	6	POL	72SIN 01		47			AA	79HIL 01
44	4		FAA	81KNA 01		47			ICPES	81WEI 01
44	5		FAA	84ROS 01		47		6	FAA	81JAC 01
44	6		FAA	84GLA 11		47	0.5		IDMS	83BRO 01
44.1	3.1	11	ICPES	81MUN 01		47	2.5		ASV	79BRI 02
44.1	4		AA	83RAP 01		47	4		ICPES	79ABE 01
44.2	2.1		PAA	74CHA 01		47	5		ASV	81DOG 01
44.3			FAA	79YAS 01		47	6		EXRF	79KUE 01
44.5	1.7		POL	74MAI 01		47.1	4.7		XRF	74REU 01
44.5	6.2		XRF	77SMI 04		47.3	5.6		FAA	82WEI 01
44.6	1.7		POL	72MAI 01		48	5		AA	82RIT 01
44.6	1.7		POL	77MAI 01		48	5		AA	78RIT 01
44.67	1.53		ASV	77KON 01		48.6	3.8		EXRF	75REU 01
44.7	0.8	6	FAA	84FUD 01		49			DCPES	78NAK 01
44.9			ICPES	78CAP 01		49	2		PAA	80SEG 01
44.9	1		ASV	82SAT 02		49	5		EXRF	77NIE 01
45		6	ICPMS	83DOU 01		49.3		16	AA	79ABO 01
45			POL	74LUT 01		49.3	1.5		PAA	80YAM 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Pb (ug/g) cont.</u>										
49.7	1.4	6	FAA	84FUD 01		10			ITNA	80CRE 01
50			AE+AF	79ULL 01		10	0.9		ITNA	79AHM 01
50			FAA	74BRA 03		10	1		14NAA	81WIL 02
50			AA	76FUK 01		10	1		EXRF	79KUE 01
50	5		EXRF	77FLO 01		10	1.5		CPXRF	80KIR 01
50	11		AA	79MCQ 01		10.3		1	IENA	79KUC 01
51	3		EXRF	80DYC 01		10.3	0.6		ITNA	74RAN 02
52.6			FAA	78CAP 01		10.3	0.7		ITNA	75RIC 01
54	10		CPXRF	77CAM 01		10.5			ITNA	79KUC 01
54.5	7.2		ICPES	82AZI 01		10.5			ITNA	78CAP 01
56	1	6	ICPES	85ABD 01		10.6		1	IENA	79KUC 01
57	12		14NAA	81WIL 01		10.8	0.4		ITNA	79SAT 01
57	17		CPAA	77ZIK 01		10.8	2		SSMS	84VOS 01
58		6	ICPES	85ABD 01		10.95	0.08		ITNA	81KOS 01
67.5		6	DCPES	84SNE 01		11			RTNA	72MOR 03
76.1			AF	85NAR 02		11	0.8		EXRF	73GIA 01
85			OES	75BOL 02		11	1		ITNA	77ZIK 01
115			EXRF	81PAR 01		11	1		EXRF	80DYC 01
						11	1		ITNA	78LAU 02
<u>Pd (ng/g)</u>										
<	1	L	RTNA	81BYR 01		11	2		RTNA	77MEL 01
						11	2		CPXRF	77CAM 01
						11	16	R	AA	75MAN 01
<u>Pr (ng/g)</u>										
60			SSMS	78URE 01		11.2	1.5		ITNA	81HAB 01
65	3		RTNA	84ODD 01		11.28	0.42		NAA	76GUZ 01
103	15		RTNA	86TSU 01		11.3	2.9	5	ITNA	80TOU 01
110			RTNA	80SLO 01		11.3	5.2		EXRF	75REU 01
230			RTNA	77LAU 02		11.4			EXRF	81BIS 01
230	D		RTNA	82LAU 01		11.5			XRF	78CAM 02
270		11	SSMS	85VOS 01		11.5	0.6		EXRF	79GIA 01
						11.5	0.9		FAA	83GRO 02
<u>Pt (ng/g)</u>										
<	1		RTNA	84TJI 01		11.5	1		EXRF	77NIE 01
0.2			RTNA	82ZEI 01		11.6	1		ITNA	85MAD 01
89.2	15.4		RTNA	77NAD 01		11.6	3.4		SSMS	84VOS 01
1200	300		RTNA	74CAR 03		11.7	0.1		ITNA	78GIL 01
						11.8			ITNA	80SAT 01
						11.8	1.2	35	ITNA	80GLA 03
<u>Rb (ug/g)</u>										
5	2		EXRF	77FLO 01		11.9	0.8		NAA	78GAN 01
8.5	0.6		EXRF	85COE 02		12	0.7		ITNA	82COR 01
9.8		11	SSMS	85VOS 01		12	1.1	6	ITNA	74BEC 01
9.8	1.3		XRF	77SMI 04		12	1.5		ITNA	77HAM 01
9.9	2.6		SSMS	84VOS 01		12.1	2		ITNA	76KUC 01
10			CPXRF	84KAU 01		12.5			ITNA	85MIS 01
10		11	SSMS	85VOS 01		12.5	0.6		PAA	78HIS 01
10			NAA	77LAU 01		12.5	1		PAA	76KAT 04

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Rb (ug/g) cont.</u>										
12.6	2.1		XRF	78STA 02		2300	200		TCGS	77JUR 01
12.8	0.6		14NAA	81WIL 01		2400			TURB	79BOG 01
12.8	0.7		CPXRF	85CLA 01		2400			FE	79BOG 01
13	0.9		VV	81NON 01		2600	400		CPAA	84ROU 01
13	1		PAA	76KAT 02		2600	400		CPAA	85FRI 01
13	2		ITNA	81KUL 01		2700	400		XRF	81NAD 01
13	3.5		CPXRF	81ROB 02		7020	2620		EXRF	77NIE 01
13.1	2.5		SSMS	84VOS 01						
14	1		ITNA	84TU 01						
14	2		ITNA	85WAH 01						
14.8			CPXRF	75CAM 01		1.1	0.2		ITNA	77ZIK 01
15.61	3.01		ITNA	79REN 03		2.2	0.2		HAA	74LOO 01
19.9			SSMS	81VER 02		2.3		11	SSMS	85VOS 01
28			EXRF	81PAR 01		2.3	0.26		RTNA	83SIR 01
30			CPAA	78MCG 01		2.3	0.3	H	ICPES	79ROB 01
30			CPXRF	76ZEI 01		2.5			ITNA	78CAP 01
						2.5	3.6	R	ITNA	79IMA 01
						2.5	3.6	RD	ITNA	79IMA 03
						2.55		11	FAA	79HOE 02
<u>S (ug/g)</u>						2.55		11	FAA	79HOE 02
1200			CB	72JON 03		2.57	0.19		ITNA	79REN 03
1400	200	17	VV	72JON 03		2.58	0.47		ITNA	85MAD 01
1400	600		CPXRF	79REN 02		2.62		6	NAA	78GAN 01
1660	220		TCGS	79AND 01		2.7			ITNA	80CRE 01
1690	5		TITR	80SMI 01		2.7			IENA	79KUC 01
1700	200		TCGS	79FAI 01		2.7		1	IENA	79KUC 01
1760	790	7	NM	83LI 01		2.7			NAA	77LAU 01
			CPXRF	84KAU 01		2.7	0.1		ITNA	78LAU 02
1830			XRF	83GUN 01		2.7	0.2	D	RTNA	74GOE 01
1850	30		ICPES	84MOR 01		2.7	0.2		RTNA	73GOE 01
1860	90		COLOR	82BAR 01		2.7	0.2		ITNA	85WAH 01
1860	180		ICPES	84PRI 01		2.7	0.3		ITNA	74RAN 02
1890	100		CB	84HER 01		2.7	0.3		ITNA	74BEC 01
1900	34		CB	84LEC 02		2.7	0.3	6	ITNA	74BEC 01
1920	20		CB	86BOW 01		2.7	0.4		14NAA	81WIL 02
1920	90		CB	86GAU 01		2.7	0.4	6	ITNA	74BEC 01
1943	23		CB	86GAU 01		2.72	0.01		ITNA	79AHM 01
1950	200		XRF	82BAR 01		2.72	0.01		ITNA	83AHM 01
1960		D	CB	85JAC 01		2.72	0.2		ITNA	82QUR 01
1960	40	6	CB	84JAC 01		2.77	0.02	H	ICPES	81PAH 01
2000	300		IC	83HER 01		2.8			HAA	80HON 01
2020	180		CB	84GLA 11		2.8			ITNA	79KUC 01
2028	21		ICPES	85LIE 02		2.8		1	IENA	79KUC 01
2040		D	CB	85JAC 01		2.8		11	HAA	82KUE 03
2040	60	6	CB	84JAC 01		2.8			ITNA	85MIS 01
2120			XRF	78CAM 02		2.8	0.1	7	RTNA	77GIL 03
2120	50		EXRF	77NIE 01		2.8	0.1		RTNA	78GAL 01
2140	60		WXRF	86BOW 01		2.8	0.1	H	ICPES	82HAH 01
2150	200		CB	77LAN 01		2.8	0.1	7	RTNA	80GAL 02
2150	380		EXRF	75REU 01		2.8	0.2		ITNA	81KOS 01
2200	103		CPXRF	80KIR 01		2.8	0.2		ICPES	83OLI 01
2200	1100	7	NM	83LI 01		2.85	0.06		RTNA	80SLO 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sb (ug/g) cont.</u>						<u>Sc (ng/g)</u>				
2.86	0.08		RTNA	78GIL 01		40		6	NAA	78GAN 01
2.88	0.05		ITNA	80GAL 02		40	3	6	ITNA	74BEC 01
2.88	0.05	7	RTNA	77GIL 03		40	10	6	NAA	78GAN 01
2.9		11	HAA	82CPO 03		41	4		VV	81NON 01
2.9	0.09		RTNA	79HOE 01		44	3		ITNA	74RAN 02
2.9	0.1		ITNA	81KOS 01		50	10		RTNA	83SIR 01
2.9	0.2		ITNA	78VAL 01		52	3		ITNA	79CHA 04
2.9	0.3		ITNA	84TU 01		54	4		RTNA	80SLO 01
2.9	0.5		RTNA	79REN 01		57	6		ITNA	81KOS 01
2.92	0.08	7	RTNA	80GAL 02		60	1		ITNA	78LAU 02
2.92	0.08	7	RTNA	77GIL 03		62			NAA	74BEL 01
2.95	0.25		AA	83RAP 01		62	2		ITNA	79KOB 03
2.99	0.05		HAA	76F10 01		62	3		ITNA	84TU 01
2.99	0.45		RTNA	79ROS 02		62	4.5		ITNA	85MAD 01
3			RTNA	79BYR 01		63	8		ITNA	76KUC 01
3			RTNA	72MOR 03		65			NAA	77LAU 01
3		11	HAA	82KUE 03		65	3		ITNA	75RIC 01
3	0.1		HAA	85YAM 01		66			ITNA	85GAU 04
3	0.2		FAA	80NAY 01		66	3		ITNA	84GLA 11
3	0.2	7	RTNA	80GAL 02		66	6		ITNA	79SAT 01
3.02	0.26		HAA	79VIJ 01		67			ITNA	78CAP 01
3.1		11	HAA	82CRO 03		67	5		ITNA	81HAB 01
3.1	0.03		VV	81NON 01		70.1	4		ITNA	83AHM 01
3.1	0.1		ITNA	79SAT 01		73			ITNA	80CRE 01
3.1	0.7		ITNA	77HAM 01		75	5	5	ITNA	80TOU 01
3.14	0.13		RTNA	72BYR 01		75	7		ITNA	85WAH 01
3.15	0.26		PAA	74CHA 01		80			ITNA	79KUC 01
3.16	0.26		HAA	77JER 01		80	6		ITNA	79REN 03
3.2	0.2		GCMES	75TAL 01		81	2		ITNA	84GIB 01
3.25	0.3		PAA	76KAT 04		90			ITNA	85MIS 01
3.3		11	HAA	82KUE 03		90	20		ITNA	81KUL 01
3.3	0.14		ITNA	79KOB 03		110			SSMS	78URE 01
3.3	0.2	5	ITNA	80TOU 01		170	50		RTNA	77MEL 01
3.3	0.2		PAA	76KAT 02		200			RTNA	72MOR 03
3.3	0.3		ITNA	81KUL 01		220	10		PAA	74CHA 01
3.3	0.6		RTNA	77KUS 01						
3.31	0.15		ITNA	84NDI 01						
3.5			ICPES	85NAR 02						
3.5			AF	85NAR 02		24	6.7		FAA	81MEY 01
3.5	0.2		PAA	78HIS 01		53			FLUOR	79TAM 01
3.5	0.3		FAA	78HAY 01		55	9		HAA	76FIO 01
3.78	0.02		ITNA	81HAB 01		56	20		RTNA	79ROS 02
3.8	0.2		RTNA	73TJI 01		57	6.3		ITNA	77HAM 01
3.8	0.6	6	NAA	78GAN 01		58	14		RTNA	73TJI 01
5.1	1.1		14NAA	81WIL 01		60	20	D	RTNA	74GOE 01
						60	20		RTNA	73GOE 01
						60	20		ICPES	83OLI 01
						64		7	ICPES	84MIA 01
						65	14	9	ITNA	80WAN 01
						68			FAA	82HEI 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Se (ng/g) cont.</u>										
70			FAA	78CAP 01		82	20		IENA	81KOS 01
70		11	HAA	85PIW 01		82	24		HAA	76IHN 02
70	4		ICPES	80HAA 01		83	4		DCPES	81CAR 02
70	10	H	ICPES	82HAA 01		83	4		GCMES	74TAL 02
70	20		HAA	82TAM 01		83	4		VV	81NON 01
70	200	R	RTNA	81GLA 03		83	12	9	ITNA	77VOB 01
72	8		FLUOR	83KOH 01		84	8		RTNA	78GIL 01
74			ITNA	81MEY 01		85	4		ITNA	79SAT 01
74			ITNA	81HAN 01		86	10		ITNA	78GIL 01
75	5	7	RTNA	80GAL 02		87		17	FLUOR	74AND 01
75	5	7	RTNA	77GIL 03		87	3	6	FLUOR	75OLS 01
75	20		AA	83RAP 01		87	3		FLUOR	74LEI 01
76	1.3		HAA	81HAN 01		87	7		HAA	75SIE 01
76	3	11	GC	81UCH 02		87	10	7	RTNA	77GIL 03
76	10		ITNA	79AHM 01		87	10	7	RTNA	80GAL 02
77		17	FLUOR	74AND 01		88	7		RTNA	73HEY 01
77	2	11	GC	81UCH 02		88	11		FLUOR	74IHN 02
77	5		FLUOR	76CHA 02		88	16		ASV	76AND 01
77	6		FAA	79VOB 01		89	3	6	FLUOR	75OLS 01
78			HAA	77IHN 01		89	17		ITNA	77VOB 01
78		7	ICPES	84MIA 01		90			HAA	80HON 01
78	4		ASV	84ADE 01		90		11	HAA	85PIW 01
78	4		RTNA	78COO 01		90	4		HAA	85YAM 01
78	4		ITNA	77GUI 02		90	10	7	RTNA	80GAL 02
78	5		GC	77POO 01		90	10	7	RTNA	77GIL 03
78	7	34	HAA	78FLA 01		90	10		RTNA	77BAN 03
78	7.2		HAA	81MEY 01		90	10		RTNA	78GAL 01
78	10		ITNA	83AHM 01		90	10		ITNA	82QUR 01
78	10		ITNA	85WAH 01		90	20		ITNA	79PAV 02
78	11		RTNA	82POL 01		90	30		ITNA	78LAU 02
79	12		RTNA	77ROO 02		100			ITNA	80CRE 01
79	12		RTNA	72ROO 03		100			ITNA	79VOB 01
79.8	8		NAA	76GUZ 01		100	20	7	RTNA	80GAL 02
80		17	FLUOR	74AND 01		100	20	9	ITNA	78LAU 02
80			NAA	78GAN 01		100	20	6	ITNA	74BEC 01
80			RTNA	72MOR 03		100	40		NAA	74LEI 01
80		7	ICPES	84MIA 01		110	20		RTNA	80SLO 01
80	1		FAA	80NEV 01		110	30		AA	79PAV 02
80	4		FLUOR	80KOH 01		118	79		HAA	77IHN 03
80	10		RTNA	80KNA 01		130	40		RTNA	77MEL 01
80	10	9	ITNA	79VOB 01		140	20		ITNA	74RAN 02
80	10	9	ITNA	79PAV 02		140	90		RTNA	83SIR 01
80	10		RTNA	75ABU 01		160			ICPES	84MAR 01
80	10		RTNA	74ORV 01		200			ITNA	78CAP 01
80	10		ITNA	84GIB 01		1100	170		HAA	74CHU 01
80	20		HAA	80AGE 02						
80	20		SSMS	77ROO 02						
80	30		ITNA	81KOS 01						
80.4	4.6		RTNA	78GOE 03						
81	9		HAA	83KOL 01						

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Si (ug/g)</u>						<u>Sn (ng/g)</u>				
475.8	12.29		NAA	76GUZ 01		180	10	H	ICPES	82HAH 01
475.8	12.3		ITNA	75PIE 01		230	11	SSMS	85VOS 01	
480	14		CPXRF	80KIR 01		284	4	RTNA	74BYR 01	
500	200		14NAA	80FAA 01		290	25	RTNA	77BYR 01	
600			VV	81NON 01		304	15	5	RTNA	74BYR 01
750			NAA	78GAN 01		340	90		ICPES	80HAA 01
1000	160		14NAA	77SEG 01		375	25		COLOR	820MA 01
2080			CPXRF	84KAU 01		1750			AF	85NAR 02
2340	60		IENA	79JON 01		4100			RTNA	72BOW 01
2400		11	SSMS	85VOS 01						
<u>Sm (ng/g)</u>						<u>Sr (ug/g)</u>				
16	3		IENA	81KOS 01		14.5	2.5		FAA	77FUJ 01
19	4		ITNA	81KOS 01		18.1			SSMS	81VER 02
88	8	5	ITNA	80TOU 01		23			OES	75JON 03
90			SSMS	78URE 01		26	2		EXRF	85COE 02
90	140	R	ITNA	79IMA 01		28	0.6		PAA	78HIS 01
92	2		RTNA	86TSU 01		28	28.3	R	AA	75MAN 01
100			ITNA	79KUC 01		29.7			CPXRF	84KAU 01
100			RTNA	77LAU 02		30	6		SSMS	84VOS 01
100	1		IENA	79KUC 01		30.4			ICPES	83BRA 02
100	D		RTNA	82LAU 01		31		11	SSMS	85VOS 01
100			NAA	77LAU 01		31	3.3		CPXRF	80KIR 01
100	30		ITNA	77NAD 02		31.3	4.1		XRF	77SMI 04
105	4		RTNA	80SLO 01		31.7	4.8		14NAA	77VAN 01
110			ITNA	80CRE 01		33		11	SSMS	85VOS 01
110	10		ITNA	78LAU 02		33	4		SSMS	84VOS 01
110	10		RTNA	83SIR 01		33	6		SSMS	84VOS 01
110	30		TCGS	79FAI 01		33.1			EXRF	81BIS 01
113	7		RTNA	83TJI 01		33.6		6	ICPES	83BRA 02
114	1		RTNA	84ODD 01		34	1		FAA	82SUZ 03
130	40		ITNA	77HAM 01		34.3	0.5		EXRF	73SPA 01
140		1	IENA	79KUC 01		35			OES	75JON 04
140			RTNA	72MOR 03		35			NAA	77LAU 01
140	40		ITNA	74RAN 02		35	2		EXRF	80DYC 01
150	20		VV	81NON 01		35	3	9	ITNA	78LAU 02
150	33		ITNA	85MAD 01		35	3		ICPES	79ABE 01
170	30		TCGS	79AND 01		35.2			SSMS	84VOS 01
320	120		ITNA	79REN 03		35.2	4.9		ICPES	78DAH 01
						36		6	ITNA	84TU 01
						36			ICPMs	83DOU 01
						36			CPXRF	76ZEI 01
						36			CPAA	78MCG 01
						36	1		ICPES	85LIE 02
						36	6		ITNA	78LAU 02
						36.2	2		PAA	74CHA 01
						36.3	1.3		EXRF	79GIA 01
						36.3	1.8		CPXRF	85CLA 01
						36.5	0.3		ICPES	79HER 01
						36.5	1		PAA	76KAT 04

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Sr (ug/g) cont.</u>									
36.5	2		EXRF	77FLO 01	10	3		HAA	85YAM 01
36.5	4		EXRF	75REU 01	11	3	35	RTNA	75GLA 01
36.6	1.2		EXRF	73GIA 01					
36.7	6		XRF	78STA 02					
37	1		ITNA	79SAT 01					
37	1		PAA	76KAT 02	6.6	0.3		IENA	81KOS 01
37	1		ICPES	79MCQ 02	6.8	0.4		ITNA	81KOS 01
37	2		ICPES	79MCQ 01	40	10		RTNA	83SIR 01
37.2	0.2		IENA	81KOS 01	44			ITNA	79KUC 01
37.4	8.3		CPXRF	81ROB 02	44		1	IENA	79KUC 01
37.8	6		ICPES	83BRA 02	50	10		RTNA	80SLO 01
37.8	0.1		IENA	85GAU 04	52	4		ITNA	78LAU 02
38	5		NAA	78GAN 01	59	13		ITNA	81KUL 01
38.7	1.5		ITNA	81KOS 01	59	20		ITNA	74RAN 02
39	2		14NAA	81WIL 02	60			ITNA	80CRE 01
39	3		ICPES	84SOB 01	60			NAA	77LAU 01
40			RTNA	72MOR 03	63	23		ITNA	85MAD 01
41	3		RTNA	77KUS 01	69		1	IENA	79KUC 01
42.2	4.2		XRF	74REU 01	69.8	8.1		RTNA	85JAI 01
44.2	2.85		NAA	76GUZ 01	85			ITNA	85MIS 01
45			OES	75JON 01	90	50		VV	81NON 01
45			EXRF	81OHT 01					
45	2		ITNA	74RAN 02					
45	15		CPAA	77ZIK 01					
53	4		14NAA	81WIL 01	2.4	0.4		CPAA	77ZIK 01
118			EXRF	81PAR 01	6.6	0.5		ICPES	79ABE 01
160	6		ICPMS	83DOU 01	7.6			ICPES	78CAP 01
					10.5	0.8		ICPES	85LIE 02
					14.2			SSMS	81VER 02
					17.2	0.3		COLOR	82KIR 02
5			NAA	77LAU 01	17.7	2		SSMS	84VOS 01
7	2		ITNA	78LAU 02	18	8.5		EXRF	79GIA 01
10			ITNA	80CRE 01	19.1		11	SSMS	85VOS 01
10	3		ITNA	74RAN 02	19.3		11	SSMS	85VOS 01
					21.9	3		CPXRF	85CLA 01
					22	2		SSMS	84VOS 01
					22	3		SSMS	84VOS 01
1.23	0.12		ITNA	77NAD 02	23	2.3		SSMS	84VOS 01
9	1		RTNA	80SLO 01	24	5		FAA	86GAU 01
9	2		RTNA	86TSU 01	26			SSMS	78URE 01
10	7		RTNA	83SIR 01	26	3		14NAA	81WIL 01
12	2		ITNA	78LAU 02	28.6			CPXRF	84KAU 01
13	D		RTNA	82LAU 01	30	4		14NAA	81WIL 02
13			RTNA	77LAU 02	40			ITNA	78LAU 02
14			ITNA	80CRE 01	60			NAA	77LAU 01
15			NAA	77LAU 01	96	12		PAA	78HIS 01
15	2		RTNA	83TJI 01	191	33		ITNA	81HAB 01
18	1		ITNA	74RAN 02					
72	6		RTNA	84ODD 01					
80			SSMS	78URE 01					

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Tl (ng/g)</u>										
32		11	ASV	84LIE 01		140	30	6	ITNA	74HOF 01
34		11	ASV	84LIE 01		248	10	11	RTNA	82HEY 02
36		11	FAA	84LIE 01		300		35	ITNA	81GLA 03
40	20		FAA	77BRU 01		340	20	11	RTNA	72LEV 01
74			FAA	82HEI 01		361	90		UU	75WEL 02
200	40		PAA	80SEG 01		370	11		FAA	77MYR 01
300	100		PAA	78HIS 01		377	10		RTNA	80HEY 01
						390	980	RD	ITNA	79IMA 03
						390	980	R	ITNA	79IMA 01
						400	100		ITNA	77ZIK 01
<u>Tm (ng/g)</u>										
<	10		RTNA	77LAU 02		401	16		RTNA	79COR 01
<	10	D	RTNA	82LAU 01		401	16		RTNA	81COR 02
3.72	0.23		ITNA	77NAD 02		408	16		RTNA	80HEY 01
7	5.5		RTNA	84ODD 01		408	16	11	RTNA	82HEY 02
10			SSMS	78URE 01		409	41		RTNA	72DAM 01
						410	15		RTNA	80HEY 01
<u>U (ng/g)</u>										
18	3		IENA	79FAA 01		410	15	11	RTNA	82HEY 02
25	4	35	RTNA	75GLA 01		435	20		RTNA	80HEY 01
25	5		PAA	80SEG 01		440	40		RTNA	79BLO 01
25.2	1		RTNA	78DER 01		440	200		ICPES	85LIE 02
26	3		RTNA	72BEC 03		471	14	11	RTNA	78BYR 01
27	8		ITNA	81KUL 01		480	28		COLOR	82KIR 01
27	10		ITNA	85WAH 01		500	150		RTNA	77GUI 03
28	2		NT	72BEC 03		530	50	11	ICPES	82JON 01
28	3	5	RTNA	80AUG 01		535	30	11	RTNA	78BYR 01
28	3		IENA	81KOS 01		540	20	11	ICPES	82JON 01
29	3	5	RTNA	80AUG 01		570	110		ITNA	81HAB 01
30		35	DNA	81GLA 04		570	140	6	ITNA	74HOF 01
30	1		IDMS	72BEC 03		580			ITNA	76BAT 01
30	4	13	PAA	81SEG 01		580	70		ITNA	75RIC 01
30	6	13	PAA	81SEG 01		580	130		ITNA	77HAM 01
30.6	0.6	35	DNA	80GLA 04		598	32		ITNA	80HEY 01
31	7		DNA	84GLA 11		600	20		RTNA	79BLO 01
32	5		ITNA	81KOS 01		600	200		ITNA	78LAU 02
32	9		ITNA	74WEA 01		610	23		ITNA	73PIE 01
33	2		DNA	84GLA 02		622	23	11	RTNA	72LEV 01
33.6	0.6		DNA	85GAU 04		640	310		UU	75GUI 01
34.3	0.6		DNA	86GAU 01		643	129		RTNA	76GUI 01
56	9	35	DNA	81GLA 03		660		11	SSMS	85VOS 01
						680		11	SSMS	85VOS 01
						700	100		ITNA	79KOB 03
						750	110		VV	81NON 01
						800			ITNA	78CAP 01
						900	20		ITNA	76GAL 01
						2200	100		ICPES	79ABE 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>W (ng/g)</u>						<u>Zn (ug/g) cont.</u>					
	<	2000	L	RTNA	72MOR 03		22		AA	83ELA 01	
16		4		RTNA	80SLO 01		22	1	EXRF	80DYC 01	
20		7		RTNA	77KUS 01		22	3.1	CPXRF	80KIR 01	
50		10		RTNA	83SIR 01		22.5	0.8	AA	76GAL 01	
							23		AA	73LOO 03	
<u>Y (ng/g)</u>						23		AA	84SAT 02		
	<	1000	L	EXRF	79GIA 01		23		AE+AF	79ULL 01	
	<	1100	L	14NAA	81WIL 01		23		OES	75JON 02	
	<	1100	L	14NAA	81WIL 02		23		EXRF	81BIS 01	
480				SSMS	78URE 01		23		ITNA	78CAP 01	
							23	11	SSMS	85VOS 01	
<u>Yb (ng/g)</u>						23	1	RTNA	76MEL 03		
						23	1	RTNA	77MEL 01		
11				RTNA	80SLO 01		23	1.5	EXRF	85COE 02	
20				SSMS	78URE 01		23	2	RTNA	80GAL 02	
20		2		RTNA	86TSU 01		23	2.1	XRF	78LIN 01	
20		20		RTNA	83SIR 01		23.1		SSMS	84VOS 01	
21		1		ITNA	77NAD 02		23.1	0.8	ICPES	78CAP 01	
21		2		RTNA	83TJI 01		23.2	2.2	RTNA	83DAN 01	
25				RTNA	77LAU 02		23.3		77BRU	77RAV 01	
25		D		RTNA	82LAU 01		23.4	2.7	ASV	84LOC 01	
27		5		RTNA	84ODD 01		23.5	1.4	11	82JON 01	
29		3		ITNA	81KOS 01		23.5	0.9	ICPES	82THO 01	
31		1		ITNA	81KOS 01		23.5	1.8	AA	73GIA 01	
34		3		ITNA	85WAH 01		23.7	0.8	EXRF	73GI 01	
40				NAA	77LAU 01		23.75		ITNA	82AKA 01	
							23.9	1.5	ASV	84LOC 01	
							23.9	3.2	PAA	84YAM 01	
<u>Zn (ug/g)</u>						24		FAA	73SEG 01		
						24		AA	81ARA 01		
12				EXRF	82KEE 01		24		FAA	83ATS 01	
13				OES	75BOL 02		24		6	ICPES	83CHA 01
15		3		CPXRF	77CAM 01		24		1	AA	77FRY 01
17				AA	76KRI 03		24	0.4	VV	81NON 01	
17.1		2		EXRF	77FLO 01		24	1	7	RTNA	84FAR 02
18				OES	75JON 09		24	1	RTNA	74ORV 01	
18		1		ICPES	85LIE 02		24	1	7	RTNA	84FAR 02
19				FAA	83ATS 01		24	1	11	AA	78GAI 01
19		4		ICPES	79HER 01		24	1	AA	84GLA 02	
19.8		6		ICPES	83BRA 02		24	1.5	FAA	84ROS 01	
20		3		ITNA	81KUL 01		24	2	11	AA	84GAI 01
20		4		ICPES	82AZI 02		24	2	7	RTNA	84FAR 02
20		6		CPAA	77ZIK 01		24	2		ITNA	85WAH 01
20.3		11		SSMS	85VOS 01		24	3	AA	77YAN 01	
21		1		ICPES	79ABE 01		24	28	R	AA	75MAN 01
21		2		ITNA	75RIC 01		24.2	1.5	NAA	77JER 01	
21		7		SSMS	84VOS 01		24.2	1.5	PAA	74CHA 01	
21.5		1.8		ICPES	82AZI 01		24.2	2	AA	83RAP 01	
21.7		2.8		ITNA	81HAB 01		24.3	0.3	11	ICPES	82JON 01
22				ITNA	79KUC 01		24.4	0.9	CPXRF	85CLA 01	

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Zn (ug/g) cont.</u>										
24.5			CPXRF	84KAU 01		26	1		ICPES	79MCQ 02
24.5			XRF	78CAM 02		26	1		ICPES	79MCQ 01
24.5	0.6		RTNA	80SL0 01		26	1.3	11	AA	75ISA 01
24.5	0.8		RTNA	83SIR 01		26	2	11	ICPES	82JON 01
24.5	3		EXRF	77NIE 01		26	2.1		AA	78LIN 01
24.6			RTNA	79YR 01		26	3		ICPES	80SCH 05
24.6	0.9		SSMS	72MAG 01		26	3	D	ICPES	80SCH 08
24.6	2.2	11	ICPES	81MUN 01		26	3		RTNA	74CAR 03
24.7			AA	83FAG 01		26	3		EXRF	79KUE 01
24.7	1.5		ITNA	84TU 01		26	3.4		ITNA	77HAM 01
24.7	2.2	6	EXRF	79MAT 01		26	4		ITNA	76KUC 01
24.8	1.1		ITNA	78GIL 01		26	4		ICPES	84ABD 01
24.8	1.9		ITNA	79SAT 01		26	5		AA	75ABU 01
25			ITNA	80CRE 01		26	14		AA	82HAR 01
25			ITNA	80SAT 01		26.1	2.2		ITNA	82COR 01
25			OES	75JON 03		26.3	5		XRF	78STA 02
25			RTNA	72MOR 03		26.4	1.8		ICPES	83SCH 04
25		6	ICPES	83CHA 01		26.7	4.6	6	ITNA	74BEC 01
25			ICPES	81WEI 01		26.8	1.2		ITNA	81KOS 01
25	1		ICPES	84SOB 01		26.9	1.1	11	ASV	84LOC 01
25	1	11	ICPES	82JON 01		26.9	1.2		RTNA	73TJI 01
25	1	6	ICPES	85ABD 01		27		6	ICPES	85ABD 01
25	1	11	ICPES	82JON 01		27			OES	75JON 06
25	1		AA	78RIT 01		27			AA	79HIL 01
25	1.6		EXRF	73SPA 01		27		1	AA	77FRY 01
25	2	9	ITNA	78LAU 02		27			ICPES	78DAH 01
25	3		FAA	82JEN 02		27			NAA	77LAU 01
25	3		ITNA	78LAU 02		27	1	11	ICPES	82JON 01
25	4		SSMS	84VOS 01		27	2		RTNA	77KUS 01
25.07	0.76		NAA	76GUZ 01		27	2		RTNA	73GOE 01
25.1	0.7		AF	75EPS 01		27	2	D	RTNA	74GOE 01
25.1	0.8		AA	75EPS 01		27	2		ITNA	83AHM 01
25.3			SSMS	81VER 02		27	2		FAA	74TAL 01
25.3	0.5		AA	80AGE 01		27	2	7	AA	73TAL 01
25.3	2.1		EXRF	79GIA 01		27	3		PAA	76KAT 02
25.3	2.5	6	EXRF	79MAT 01		27	4		PAA	76KAT 04
25.5		11	AA	79HOE 02		27	5		SSMS	84VOS 01
25.5		6	ICPES	83BRA 02		27	7		ITNA	77ZIK 01
25.5	1.1	6	ITNA	74BEC 01		27.2	2.4		ITNA	74RAN 02
25.6	3.4		EXRF	75REU 01		27.3			ICPES	85NAR 02
25.6	7.64		AA	79MON 01		27.3	2.1		ITNA	82QUR 01
25.9			FAA	78CAP 01		27.3	2.1		ITNA	79AHM 01
26			OES	75JON 10		27.4	2.7		XRF	74REU 01
26			OES	75JON 11		27.5		11	AA	79HOE 02
26			OES	75JON 05		27.6	1.3		CPXRF	81ROB 02
26			NAA	74BEL 01		28			OES	75ISA 01
26		6	AF	84NAR 02		28			ITNA	85MIS 01
26		6	AF	84NAR 02		28	1	D	DCPES	81REE 01
26	1	11	ICPES	82JON 01		28	1		DCPES	79REE 01
26	1	11	ICPES	82JON 01		28	3		FAE	74TAL 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Zn (ug/g) cont.</u>						<u>Zr (ug/g)</u>				
28	3	7	AE+AF	73TAL 01		<	3	L	EXRF	79GIA 01
28	5		FAA	77LOR 01		<	5	L	14NAA	81WIL 01
28.1			CPXRF	75CAM 01		0.4		11	SSMS	85VOS 01
28.3	0.8		ITNA	79KOB 03		1.3	0.3		PAA	78HIS 01
28.3	2.6	6	POL	72SIN 01		1.6	0.2	9	ITNA	78LAU 02
28.5		6	ICPES	83BRA 02		1.7			PAA	84SAT 01
28.5	0.8		ICPES	81KNA 01		2.1			NAA	77LAU 01
28.6	2.5	11	ICPES	81MUN 01		3		1	14NAA	81WIL 02
28.7			AF	85NAR 02		3.8			CPAA	77ZIK 01
29	0.87	11	AA	75ISA 01		210	20		PAA	74CHA 01
29	1		FAA	79KRA 01						
29	2		ITNA	74GUI 01						
29	5		NAA	78GAN 01						
29	32	RD	ITNA	79IMA 03						
29	32	R	ITNA	79IMA 01						
29.1	3.7		ICPES	85LYO 01						
29.3	2.5		PAA	76WIL 01						
29.5		6	AA	72SIN 01						
29.6		16	AA	79ABO 01						
29.6		16	AA	79ABO 01						
29.63	1.8		ITNA	79REN 03						
29.8		6	POL	72SIN 01						
30			EXRF	81OHT 01						
30			ICPES	81GOO 01						
30	2	5	ITNA	80TOU 01						
30	2		AA	79MCQ 01						
30	3		PAA	80SEG 01						
30	4		ITNA	78FUR 01						
30.5	1.2		RTNA	76GAL 01						
31			OES	75JON 04						
32			OES	75JON 07						
34	3		PAA	78HIS 01						
35.6	11.4		XRF	77SMI 04						
36.4	7		ITNA	85MAD 01						
37			ICPES	84NAD 01						
38	6		FAA	77FUJ 01						
41			OES	75JON 08						
45			XRF	80SUZ 02						
56			CPXRF	76ZEI 01						
56			CPAA	78MCG 01						
77			EXRF	81PAR 01						
81			OES	75JON 01						

TABLE 1572-1: COMPILED DATA FOR NBS SRM 1572 CITRUS LEAVES (revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		AA		NAA		OTHER METHODS			
		Mean ± SD	n	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	
Al	ug/g	92 ± 15		76.5 (2)	---	75 - 78	---	75 (1)	78 (1)	75 (1)	78 (1)	75 (1)	78 (1)	7.8 (1)	ICPES		
As	ug/g	3.1 ± 0.3		3.0 ± 0.3 (4)	2.77 (1)	2.7 - 3.38	---	3.0 ± 0.3 (4)	---	3.0 ± 0.3 (4)	---	3.0 ± 0.3 (4)	---	---	---	---	
Au	pg/g	---		110 (1)	---	---	---	110 (1)	---	110 (1)	---	110 (1)	---	69 (1)	ICPES		
B	ug/g	---		66.6 (2)	---	64.3 - 69	---	---	---	---	---	64.3 (1)	TCGS	64.3 (1)	TCGS		
B	ug/g	---		---	---	---	---	---	---	---	---	24 (1)	ICPES	24 (1)	ICPES		
Ba	ug/g	21 ± 3		23.5 (2)	---	23 - 24	---	23 (1)	---	23 (1)	---	23 (1)	---	---	---	---	
Be	ng/g	---		6.9 ± 0.8 (3)	7.2	6 - 7.6	6 (1)	6 (1)	6 (1)	6 (1)	6 (1)	6 (1)	6 (1)	7.4 (2)	FAAC		
Be	ng/g	---		---	---	---	---	---	---	---	---	7.4 (2)	FAAC	7.4 (2)	FAAC		
Br	ug/g	8.2		8.36 (1)	---	---	---	8.36 (1)	---	8.36 (1)	---	8.36 (1)	---	---	---	---	
Ca	%	3.15 ± 0.10		3.13 ± 0.04 (5)	3.14	3.07 - 3.19	---	3.10 (2)	---	3.10 (2)	---	3.15 ± 0.04 (3)	ICPES	3.15 ± 0.04 (3)	ICPES		
Cd	ng/g	30 ± 10		46 (2)	---	37 - 55	55 (1)	37 (1)	37 (1)	37 (1)	37 (1)	37 (1)	37 (1)	---	---	---	
Ce	ng/g	280		453 (2)	---	392 - 514	---	453 (2)	---	453 (2)	---	453 (2)	---	453 (2)	---	453 (2)	
Cf	ug/g	414		404 (2)	---	391 - 417	---	417 (1)	417 (1)	417 (1)	417 (1)	417 (1)	417 (1)	391 (1)	TCGS	391 (1)	
Co	ng/g	20		16 (1)	---	---	---	16 (1)	16 (1)	16 (1)	16 (1)	16 (1)	16 (1)	---	---	---	
Cr	ug/g	0.8 ± 0.2		1 (1)	---	1 (1)	---	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	---	---	---	
Cs	ng/g	98		93 ± 16 (3)	85	83 - 111	---	93 ± 16 (3)	---	93 ± 16 (3)	---	93 ± 16 (3)	---	93 ± 16 (3)	---	93 ± 16 (3)	
Cu	ug/g	16.5 ± 1.0		16 ± 1.0 (6)	15.9	14.6 - 17	16.7 ± 0.6 (3)	14.6 - 17	16.7 ± 0.6 (3)	14.6 - 17	14.6 - 17	14.6 - 17	14.6 - 17	14.6 - 17	15 (1)	ICPES	
Cu	ug/g	---		---	---	---	---	---	---	---	---	15.9 (1)	HPLC	15.9 (1)	HPLC		
Dy	ng/g	---		43 (1)	---	---	---	---	---	43 (1)	---	43 (1)	---	43 (1)	---	43 (1)	
Er	ng/g	---		22 (1)	---	---	---	---	---	22 (1)	---	22 (1)	---	22 (1)	---	22 (1)	
Eu	ng/g	10		13.5 (2)	---	12 - 15	---	12 - 15	---	12 - 15	---	13.5 (2)	---	13.5 (2)	---	13.5 (2)	
F	ug/g	---		4 (1)	---	---	---	---	---	4 (1)	---	4 (1)	---	4 (1)	COLOR	4 (1)	
Fe	ug/g	90 ± 10		101 ± 6 (4)	96	95 - 109	96 (2)	95 - 109	96 (2)	95 - 109	96 (2)	95 - 109	96 (2)	105.9 (2)	ICPES	105.9 (2)	ICPES
Gd	ng/g	---		39 (1)	---	---	---	---	---	39 (1)	---	39 (1)	---	39 (1)	---	39 (1)	
H	%	---		5.96 (1)	---	---	---	5.96 (1)	---	5.96 (1)	---	5.96 (1)	---	5.96 (1)	TCGS	5.96 (1)	
Hg	ng/g	80 ± 20		81 ± 3 (3)	83	77 - 83	83 (1)	77 - 83	83 (1)	77 - 83	83 (1)	77 - 83	83 (1)	80 (2)	---	80 (2)	
Ho	ng/g	---		8 (1)	---	---	---	8 (1)	8 (1)	8 (1)	8 (1)	8 (1)	8 (1)	8 (1)	---	8 (1)	
I	ug/g	1.84 ± 0.03		1.46 (2)	---	1.29 - 1.62	---	1.29 - 1.62	---	1.29 - 1.62	---	1.29 - 1.62	---	1.46 (2)	---	1.46 (2)	
K	%	1.82 ± 0.06		1.83 ± 0.04 (5)	1.84	1.78 - 1.89	1.79 (2)	1.78 - 1.89	1.79 (2)	1.78 - 1.89	1.79 (2)	1.78 - 1.89	1.79 (2)	1.84 (2)	ICPES	1.84 (2)	ICPES
K	%	---		---	---	---	---	---	---	---	---	---	---	---	---	---	---
La	ng/g	190		198 (2)	---	192 - 203	---	192 - 203	---	192 - 203	---	192 - 203	---	198 (2)	---	198 (2)	
Li	ng/g	---		230 ± 105 (3)	190	150 - 350	270 (2)	150 - 350	270 (2)	150 - 350	270 (2)	150 - 350	270 (2)	150 (1)	AAC	150 (1)	AAC
Lu	ng/g	---		1.55 (2)	---	1.1 - 2	---	1.1 - 2	---	1.1 - 2	---	1.1 - 2	---	1.55 (2)	---	1.55 (2)	
Mg	ug/g	5800 ± 300		5600 ± 70 (5)	5600	5500 - 5700	5650 (2)	5500 - 5700	5650 (2)	5500 - 5700	5650 (2)	5500 - 5700	5650 (2)	5570 ± 60 (3)	ICPES	5570 ± 60 (3)	ICPES

TABLE 1572-1: COMPILED DATA FOR NBS SRM 1572 CITRUS LEAVES (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS		MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	OTHER METHODS	
			Mean ± SD	(n)					SD (n)	Method
Mn	ug/g	23 ± 2	22.9 ± 1.4	(7)	23	21 - 25	24 (2)	23.3 (1)	22.4 ± 1.6 (3)	ICPES
Mn	ug/g	---	---	---	---	---	---	---	22 (1)	TCGS
Mo	ng/g	170 ± 90	152 (2)	---	150 - 153	---	152 (2)	---	---	---
N	%	2.86	3.62 (1)	---	---	---	---	3.62 (1)	TCGS	
Na	ug/g	160 ± 20	163 ± 1 (3)	163	162 - 164	---	163 (1)	163 (2)	163 (2)	ICPES
Nd	ng/g	---	317 (2)	---	202 - 432	---	317 (2)	---	---	---
Ni	ng/g	600 ± 300	715 (2)	---	600 - 830	600 (1)	---	830 (1)	830 (1)	HPLC
P	ug/g	1300 ± 200	1310 ± 20 (3)	1300	1300 - 1332	---	---	1310 ± 20 (3)	1310 ± 20 (3)	ICPES
Pb	ug/g	13.3 ± 2.4	13.4 (2)	---	13.2 - 13.6	13.6 (1)	---	13.2 (1)	13.2 (1)	HPLC
Pt	pg/g	---	60 (1)	---	---	---	60 (1)	---	---	---
Rb	ug/g	4.84 ± 0.06	---	---	---	---	---	---	---	---
S	ug/g	4070 ± 90	4080 ± 180 (7)	4066	3822 - 4400	---	---	3822 (1)	3822 (1)	ICPES
S	ug/g	---	---	---	---	---	---	4070 ± 90 (4)	4070 ± 90 (4)	CB
S	ug/g	---	---	---	---	---	---	4400 (1)	4400 (1)	TCGS
S	ug/g	---	---	---	---	---	---	4066 (1)	4066 (1)	IDMS
S-32/34 ratio	---	---	22.6310 (1)	---	---	---	---	22.6310 (1)	22.6310 (1)	IDMS
S-33/34 ratio	---	---	0.1781 (1)	---	---	---	---	0.1781 (1)	0.1781 (1)	IDMS
Sb	ng/g	40	34 (1)	---	---	---	34 (1)	---	---	---
Sc	ng/g	10	10.4 ± 0.5 (3)	10.2	10 - 11	---	10.4 ± 0.5 (3)	---	---	---
Se	ng/g	25	---	---	---	---	---	---	---	---
Si	%	---	0.19 (1)	---	---	---	---	0.19 (1)	0.19 (1)	TCGS
Sm	ng/g	52	50 (2)	---	49 - 52	---	50 (2)	---	---	---
Sn	ng/g	240	---	---	---	---	---	---	---	---
Sr	ug/g	100 ± 2	98 ± 3 (5)	99.3	93 - 102	100 (2)	93 (1)	99.3 (1)	99.3 (1)	CPAA
Sr	ug/g	---	---	---	---	---	---	101 (1)	101 (1)	IDNAA
Tb	ng/g	---	9 (2)	---	9 - 9	---	9 (2)	---	---	---
Te	ng/g	20	---	---	---	---	---	---	---	---
Ti	ug/g	---	22 (1)	---	---	22 (1)	---	---	---	---
Tl	ng/g	< 10	---	---	---	---	---	---	---	---
U	ng/g	< 150	40 ± 2 (3)	41	37 - 41	---	40 ± 2 (3)	---	---	---
V	ng/g	---	240 (2)	---	235 - 245	---	235 (1)	245 (1)	245 (1)	---
W	ng/g	---	8.1 (1)	---	---	---	8.1 (1)	---	---	---
Yb	ng/g	---	11.5 (2)	---	8 - 15	---	11.5 (2)	---	---	---
Zn	ug/g	29 ± 2	29.9 ± 1.4 (6)	29.7	28 - 31.8	30.5 (2)	---	29.6 ± 2.0 (3)	29.6 ± 2.0 (3)	ICPES
Zn	ug/g	---	---	---	---	---	---	29.7 (1)	29.7 (1)	HPLC

TABLE 1572-2: INDIVIDUAL DATA FOR NBS SRM 1572 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (ug/g)</u>									
75	2	IENA	85GLA	02	392	53	RTNA	83TJI	01
78	12	ICPES	85ISS	01	514	79	RTNA	86TSU	01
<u>As (ug/g)</u>									
2.7	0.3	RTNA	85GAU	04	391	6	TCGS	83AND	01
2.77	0.2	RTNA	86GAU	01	417		ITNA	86GAU	01
3.2	0.06	RTNA	84GLA	11					
3.38	0.05	RTNA	84BYR	02					
<u>Au (pg/g)</u>									
110	8	RTNA	82ZEI	01	16	1	RTNA	84BYR	02
<u>B (ug/g)</u>									
64.3	0.6	TCGS	83AND	01					
69	0.3	ICPES	84PRI	01					
<u>Ba (ug/g)</u>									
23	6	FAA	86GAU	01	83		ITNA	86GAU	01
24	1	ICPES	85WHI	02	85	6	ITNA	84GLA	11
					111	25	ITNA	85GAU	04
<u>Be (ng/g)</u>									
6	0.4	FAA	86GAU	01	14.6	0.3	RTNA	84BYR	02
7.2		FAAC	86GAU	01	15	1.8	ICPES	85ISS	01
7.6	1.6	FAAC	85GAU	04	15.9	0.2	HPLC	85ICH	01
					16	0.56	AA	75ISA	01
					17	0.14	AA	75ISA	01
					17	4	AA	86GAU	01
<u>Br (ug/g)</u>									
8.36		ITNA	86GAU	01					
<u>Ca (%)</u>									
3.07	0.0055	11	AA	75ISA	01				
3.12	0.25	ICPES	85ISS	01					
3.14	0.0053	11	AA	75ISA	01				
3.15	0.29	ICPES	85LYO	01					
3.19	0.03	ICPES	85WHI	02					
3.47	0.05	TCGS	83AND	01					
<u>Cd (ng/g)</u>									
37	3	RTNA	84BYR	02	12	0.2	RTNA	83TJI	01
55	3	AA	86GAU	01	15	1	RTNA	86TSU	01
<u>F (ug/g)</u>									
					4		COLOR	83JAC	01

TABLE 1572-2: INDIVIDUAL DATA FOR NBS SRM 1572 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Fe (ug/g)</u>										
95	7.6	11	AA	75ISA 01		5180	270		AA	86GAU 01
96	8.6	11	AA	75ISA 01		5500	300		ICPES	85LYO 01
102.8	10.5		ICPES	85LYO 01		5600	1.7	11	AA	75ISA 01
109	8		ICPES	85ISS 01		5600	100		ICPES	85WHI 02
						5600	600		ICPES	85ISS 01
<u>Gd (ng/g)</u>										
39	6		RTNA	86TSU 01		5700	3	11	AA	75ISA 01
<u>H (%)</u>										
5.96	0.01		TCGS	83AND 01		21	1		ICPES	85WHI 02
						22	3		ICPES	85ISS 01
<u>Hg (ng/g)</u>										
77	3		RTNA	84DEL 01		22	6		TCGS	83AND 01
83	2		RTNA	84BYR 02		23	0.12	11	AA	75ISA 01
83	3		CVAA	86GAU 01		23.3	0.7		RTNA	84BYR 02
						24.1	1.9		ICPES	85LYO 01
<u>Ho (ng/g)</u>										
8	1		RTNA	86TSU 01		25	0.5	11	AA	75ISA 01
<u>I (ug/g)</u>										
1.29	0.05		IENA	84FAR 01		150	15		RTNA	84BYR 02
1.62	0.08		RTNA	84BYR 02		153	16		RTNA	84BYR 01
<u>K (%)</u>										
1.78	0.0004	11	AA	75ISA 01		3.62	0.04		TCGS	83AND 01
1.8	0.0011	11	AA	75ISA 01						
1.84	0.03		ICPES	85WHI 02		162	15		ICPES	85ISS 01
1.84	0.11		ICPES	85ISS 01		163			ITNA	86GAU 01
1.889	0.007		TCGS	83AND 01		164	13		ICPES	85WHI 02
<u>La (ng/g)</u>										
192	28		RTNA	86TSU 01		<u>Nd (ng/g)</u>				
203	16		RTNA	83TJI 01		202	28		RTNA	86TSU 01
						432	73		RTNA	83TJI 01
<u>Li (ng/g)</u>										
150	20		AAC	85GAU 04		<u>Ni (ng/g)</u>				
190	10		AA	86GAU 01		600	50		FAA	86GAU 01
350	50		AA	85GAU 04		830	190		HPLC	85ICH 01
<u>Lu (ng/g)</u>										
1.1	0.1		RTNA	83TJI 01		<u>P (ug/g)</u>				
2	0.4		RTNA	86TSU 01		1300			ICPES	85WHI 02
						1300	100		ICPES	85ISS 01
						1332	11		ICPES	84PRI 01
						1800	100		ICPES	85LYO 01

TABLE 1572-2: INDIVIDUAL DATA FOR NBS SRM 1572 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Pb (ug/g)</u>										
13.2	0.5		HPLC	85ICH 01		93	5	IENA	85GAU 04	
13.6	1.1		FAA	85GAU 04		97	1	AA	85GAU 04	
<u>Pt (pg/g)</u>										
60	30		RTNA	82ZEI 01		99.3	3.5	CPAA	85MAS 01	
						100.6	2.6	IDNAA	85YAG 01	
						102	1	AA	86GAU 01	
<u>S (ug/g)</u>										
3600			TURB	84JAC 01		9	2	RTNA	86TSU 01	
3822	58		ICPES	84PRI 01		9	2	RTNA	83TJI 01	
3990	90		CB	86BOW 01		<u>Ti (ug/g)</u>				
4000	300		CB	84GLA 11		22	1	FAA	86GAU 01	
4066	22		IDMS	84KEL 01		<u>U (ng/g)</u>				
4140	D		CB	85JAC 01		37	5	DNA	85GAU 04	
4140	100	6	CB	84JAC 01		41		DNA	84GLA 02	
4160	D	CB	85JAC 01			41	5	DNA	86GAU 01	
4160	70	6	CB	84JAC 01		<u>V (ng/g)</u>				
4400	200		TCGS	83AND 01		235	14	RTNA	84BYR 02	
4590	70		ICPES	85WHI 02		245	5	IDMS	85FAS 02	
<u>S-32/34 (ratio)</u>										
22.631			IDMS	84KEL 01		<u>W (ng/g)</u>				
0.1781			IDMS	84KEL 01		8.1	0.5	RTNA	84BYR 01	
<u>Sb (ng/g)</u>										
34	1		RTNA	84BYR 02		<u>Yb (ng/g)</u>				
<u>Sc (ng/g)</u>										
10	3		ITNA	86GAU 01		8	1	RTNA	83TJI 01	
10.2	1.1		ITNA	84GLA 11		15	3	RTNA	86TSU 01	
11			ITNA	85GAU 04		<u>Zn (ug/g)</u>				
<u>Si (%)</u>										
0.19	0.06		TCGS	83AND 01		28	1	ICPES	85WHI 02	
						29	4	ICPES	85ISS 01	
						29.7	0.5	HPLC	85ICH 01	
						30	1.5	AA	75ISA 01	
						31	0.62	AA	75ISA 01	
						31.8	4.1	ICPES	85LYO 01	
<u>Sm (ng/g)</u>										
49	4		RTNA	83TJI 01						
52	8		RTNA	86TSU 01						

TABLE 1573-1: COMPILED DATA FOR NBS SRM 1573 TOMATO LEAVES (revised 3/1/86)

EL	UNITS	NBS		CONSENSUS		RANGE		AA		NAA		OTHER METHODS					
		Mean $\pm$	SD	Mean $\pm$	SD	(n)		Mean $\pm$	SD	(n)	Mean $\pm$	SD	(n)	Method	Mean $\pm$	SD	(n)
A9	ng/g	---		180	(1)	---		---		180	(1)	---		---			
Al	ug/g	1200		1000 $\pm$ 300	(10)	1160	628 - 1300	1250	(1)	1268 $\pm$ 39	(3)	850 $\pm$ 300	(5)	ICPES	427	(2)	COLOR
As	ng/g	270 $\pm$ 50		253 $\pm$ 36	(24)	260	170 - 310	262 $\pm$ 37	(13)	231 $\pm$ 30	(8)	270	(1)	ICPES	290	(1)	COLOR
As	ng/g	---		---		---		---		---		---		270	(1)	MPOES	
Au	ng/g	---		0.8	(1)	---		---		0.8	(1)	---		---			
B	ug/g	30		33 $\pm$ 4	(18)	34	25.5 - 38	---		---		34 $\pm$ 5	(5)	ICPES	34 $\pm$ 2	(3)	TCGS
B	ug/g	---		---		---		---		---		33 $\pm$ 5	(11)	OES	---		
Ba	ug/g	---		57 $\pm$ 9	(10)	58	40 - 69	---		63 $\pm$ 6	(3)	64.7	(2)	ICPES	---		
Be	ng/g	---		32	(2)	---	26 - 38	---		---		26	(1)	ICPES	38	(1)	FAAC
Br	ug/g	26		21 $\pm$ 2	(11)	21	19 - 25.31	---		22 $\pm$ 2	(10)	20.3	(1)	XRF	---		
C	%	---		37.78 $\pm$ 0.12	(3)	37.8	37.67 - 37.92	---		---		37.80 $\pm$ 0.12	(3)	CB	---		
Ca	%	3.00 $\pm$ 0.03		2.83 $\pm$ 0.23	(31)	2.88	2.38 - 3.28	2.84 $\pm$ 0.06	(4)	2.7 $\pm$ 0.4	(3)	2.97 $\pm$ 0.08	(10)	ICPES	2.76 $\pm$ 0.14	(3)	XRF
Cd	ug/g	3		2.5 $\pm$ 0.2	(28)	2.55	2.1 - 3	2.5 $\pm$ 0.3	(13)	2.7	(1)	2.58 $\pm$ 0.20	(9)	ICPES	2.65 $\pm$ 0.13	(3)	ASV
Cd	ug/g	---		---		---		---		---		---		2.25	(2)	POL	
Ce	ug/g	1.6		1.3 $\pm$ 0.2	(4)	1.28	1 - 1.56	---		1.3 $\pm$ 0.2	(4)	---		---			
Cl	%	---		1.07 $\pm$ 0.03	(4)	1.05	1.04 - 1.10	---		1.07 $\pm$ 0.03	(4)	---		---			
Co	ng/g	600		525 $\pm$ 46	(7)	510	467 - 610	518 $\pm$ 28	(3)	531 $\pm$ 60	(4)	---		---			
Cr	ug/g	4.5 $\pm$ 0.5		4.0 $\pm$ 0.5	(19)	3.9	3 - 4.6	4.3 $\pm$ 0.3	(7)	3.8 $\pm$ 0.5	(5)	3.6 $\pm$ 0.9	(5)	ICPES	4.15	(2)	XRF
Cs	ng/g	---		57 $\pm$ 8	(7)	56	43 - 70	---		57 $\pm$ 8	(7)	---		---			
Cu	ug/g	11 $\pm$ 1		11 $\pm$ 2	(51)	10.81	6.9 - 15	11.6 $\pm$ 0.9	(12)	11 $\pm$ 3	(7)	9.6 $\pm$ 0.8	(11)	ICPES	9 $\pm$ 3	(3)	XRF
Cu	ug/g	---		---		---		---		---		7.7	(2)	POL	11	(2)	AF
Cu	ug/g	---		---		---		---		---		11	(1)	IDMS	10.6	(1)	
Dy	ng/g	---		68	(1)	---	---	---		68	(1)	---		10.8	(2)	COLOR	
Er	ng/g	---		51	(1)	---	---	---		51	(1)	---		---			
Eu	ng/g	40		22 $\pm$ 6	(5)	25	15 - 27	---		22 $\pm$ 6	(5)	---		---			

TABLE 1573-1: COMPILED DATA FOR NBS SRM 1573 TOMATO LEAVES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA	Mean $\pm$ SD (n)	NAA	Mean $\pm$ SD (n)	Mean $\pm$ SD (n)	OTHER METHODS
			Mean $\pm$ SD	n								
F	ug/g	---	5.5 $\pm$ 0.4 (4)	5.4	5 - 6	340 - 706	585 $\pm$ 115 (8)	628 $\pm$ 97 (7)	5.7 $\pm$ 0.3 (3)	ISE	5	(1) MS
Fe	ug/g	690 $\pm$ 25	580 $\pm$ 110 (43)	604	---	---	---	---	620 $\pm$ 50 (11)	ICPES	586	(2) XRF
Fe	ug/g	---	---	---	---	---	---	---	592 $\pm$ 15 (3)	COLOR	698	(1) VOLT
Fe	ug/g	---	---	540	(1)	---	---	---	675.8 (1)	CPAA	650	(2) AF
Fe(II)	ug/g	---	540	(1)	---	---	---	---	540 (1)	VOLT	---	---
Fe(III)	ug/g	---	158	(1)	---	69.3 - 83	83	(1)	158 (1)	VOLT	---	---
Ga	ng/g	---	76.15	(2)	---	74 - 76	---	---	69.3 (1)	---	---	---
Gd	ng/g	---	75	(2)	---	---	---	75 (2)	---	---	---	---
H	%	---	5.08 $\pm$ 0.07 (3)	5.1	5.00 - 5.14	---	---	---	5.12 (2)	CB	5	(1) TCGS
Hf	ng/g	---	250	(1)	---	---	---	250 (1)	---	---	---	---
Hg	ng/g	100	103 $\pm$ 22 (3)	91	90 - 128	91	(1)	109 (2)	---	---	---	---
Ho	ng/g	---	13	(1)	---	---	---	13 (1)	---	---	---	---
I	ng/g	---	323 $\pm$ 58 (3)	300	280 - 390	---	---	335 (2)	(1)	PAA	---	---
In	ng/g	---	0.96	(1)	---	---	---	0.96 (1)	---	---	---	---
K	%	4.46 $\pm$ 0.03	4.44 $\pm$ 0.24 (28)	4.4	3.85 - 4.81	4.49 $\pm$ 0.31 (6)	4.34 $\pm$ 0.16 (5)	4.41 $\pm$ 0.10 (7)	ICPES	4.59	(2) XRF	
La	ng/g	900	710 $\pm$ 70 (6)	677	630 - 800	---	710 $\pm$ 70 (6)	---	---	---	---	---
Lu	ng/g	---	9.3 $\pm$ 2.5 (3)	9	7 - 12	---	9.3 $\pm$ 2.5 (3)	---	6740 $\pm$ 180 (10)	ICPES	---	---
Mg	ug/g	7000	6850 $\pm$ 330 (25)	6800	6100 - 7400	6850 $\pm$ 170 (4)	6650 (2)	6740 $\pm$ 180 (10)	ICPES	235	(1) NM	
Mn	ug/g	238 $\pm$ 7	224 $\pm$ 13 (43)	226	197 - 252	224 $\pm$ 10 (11)	225 $\pm$ 24 (6)	227 $\pm$ 8 (12)	ICPES	228	(2) AF	
Mn	ug/g	---	---	---	---	---	---	230 $\pm$ 34 (3)	XRF	228	(2) AF	
Mo	ug/g	---	0.53 $\pm$ 0.09 (6)	0.5	0.4 - 0.65	---	0.64 (2)	0.48 $\pm$ 0.05 (4)	ICPES	---	---	
N	%	5	4.93 $\pm$ 0.03 (3)	4.94	4.9 - 4.95	---	---	4.94 (2)	CB	4.9	(1) TCGS	
Na	ug/g	---	470 $\pm$ 110 (19)	500	326 - 650	440 $\pm$ 130 (4)	515 $\pm$ 62 (5)	420 $\pm$ 110 (5)	ICPES	---	---	
Nd	ng/g	---	620 $\pm$ 70 (3)	580	566 - 700	---	620 $\pm$ 70 (3)	---	---	---	---	
Ni	ug/g	---	1.3 $\pm$ 0.2 (7)	1.2	1.1 - 1.7	---	1.2 (1)	1.3 $\pm$ 0.2 (6)	ICPES	---	---	

TABLE 1573-1: COMPILED DATA FOR NBS SRM 1573 TOMATO LEAVES (cont.)

ELE	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		AA		MAA		OTHER METHODS		
		Mean ± SD	n	Mean ± SD	n	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n)
P	ug/g	3400 ± 200	(28)	3370 ± 220	(41)	3318	2800 - 3900	3350 ± 130	(4)	3420	(1)	3430 ± 210	(13)	ICPES	3400	(1) CPAA
Pb	ug/g	6.3 ± 0.3	5.9 ± 0.8	(41)	6	4 - 8.1	5.9 ± 0.4	(27)	---	6.8 ± 1.9	(6)	ICPES	5.9	(1) XRF		
Pb	ug/g	---	---	---	---	---	---	---	---	6.03	(1)	IDMS	6.23	(1) CPAA		
Pb	ug/g	---	---	---	---	---	---	---	---	5.5 ± 1.1	(4)	ASV	3.85	(2) POL		
Pd	ng/g	---	< 2	---	---	---	---	---	---	< 2	---	---	---	---	---	
Pr	ng/g	---	187	(2)	---	184 - 190	---	---	187	(2)	---	---	---	---	---	
Rb	ug/g	16.5 ± 0.1	17.3 ± 2.5	(7)	16.5	15.16 - 22	---	---	17	17 ± 2	(6)	19.2	(1) XRF	---	---	
S	ug/g	---	6200 ± 400	(8)	5960	5500 - 6900	---	---	---	6374	(2)	ICPES	5960	(1) XRF		
S	ug/g	---	---	---	---	---	---	---	---	6100 ± 400	(5)	CB	---	---	---	
Sb	ng/g	---	36 ± 7	(5)	34	30 - 46	34	(1)	36 ± 8	(4)	---	---	---	---	---	
Sc	ng/g	130	173 ± 26	(9)	170	138 - 220	---	---	173 ± 26	(9)	---	---	---	---	---	
Se	ng/g	---	54 ± 6	(4)	50	49 - 61	---	---	49.5	(2)	59	(2) GC	---	---	---	
Si	ug/g	---	3000	(1)	---	---	---	---	---	3000	(1)	ICPES	---	---	---	
Sm	ng/g	---	92 ± 16	(3)	86	81 - 110	---	---	92 ± 16	(3)	---	---	---	---	---	
Sr	ug/g	44.9 ± 0.3	42 ± 5	(12)	43.7	35.6 - 54	42.95	(2)	49 ± 15	(3)	36	(1) ICPES	44	(1) XRF	---	
Sr	ug/g	---	---	---	---	---	---	---	---	45.3	(1)	IDNAA	43.85	(2) CPAA		
Ta	ng/g	---	430	(1)	---	---	---	---	430	(1)	---	---	---	---	---	
Tb	ng/g	---	9 ± 5	(3)	12	4 - 12	---	---	9 ± 5	(3)	---	---	---	---	---	
Th	ng/g	170 ± 30	205	(2)	---	190 - 220	---	---	205	(2)	---	---	---	---	---	
Ti	ug/g	---	56 ± 39	(3)	68	12.6 - 89	---	---	68	(1)	12.6	(1) ICPES	89	(1) COLOR		
Tl	ng/g	50	22	(2)	---	20 - 24	---	---	---	22	(2)	ASV	---	---	---	
U	ng/g	61 ± 3	59 ± 6	(6)	60	50.2 - 63	---	---	59 ± 6	(6)	---	---	---	---	---	
V	ug/g	---	1.2 ± 0.2	(8)	1.27	0.87 - 1.5	---	---	1.1 ± 0.2	(5)	1.37 ± 0.16	(3)	ICPES	---	---	
W	ng/g	---	< 40	---	---	---	---	---	< 40	---	---	---	---	---	---	
Yb	ng/g	---	63 ± 16	(3)	63	47 - 80	---	---	63 ± 16	(3)	---	---	---	---	---	
Zn	ug/g	62 ± 6	61 ± 4	(45)	61	52 - 71	62 ± 5	(11)	61 ± 5	(5)	61 ± 4	(16) ICPES	62.5	(1) CPAA		
Zn	ug/g	---	---	---	---	---	---	---	---	59	(2)	AF	62.9	(2) POL		
Zn	ug/g	---	---	---	---	---	---	---	65 ± 9	(3)	XRF	---	---	---	---	

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TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>										
180	50		RTNA	80SLO 01		290	10	11	HAA	82JON 01
						290	20	11	HAA	82JON 01
<u>Al (ug/g)</u>										
182			OES	75JON 02		300	30		FAA	80DUP 01
228			OES	75JON 11		310	10		HAA	80TAM 01
280			OES	75JON 07		330	30		IENA	82GLA 02
286			OES	75JON 08						
296			OES	75JON 06		0.8	0.1		RTNA	80SLO 01
321	37	11	ICPES	81MUN 01						
356			OES	75JON 03						
382			OES	75JON 04						
391			OES	75JON 09		25.5	1.1		ICPES	79HER 01
417.4	8.3	6	COLOR	85BAR 01		26			OES	75JON 10
436.3	11.5	6	COLOR	85BAR 01		28			OES	75JON 02
495			OES	75JON 05		29			OES	75JON 07
628			ICPES	81GOO 01		30			OES	75JON 04
639	21		ICPES	83SCH 03		32			OES	75JON 03
661	18	11	ICPES	81MUN 01		32			OES	75JON 01
835			OES	75JON 01		32			OES	75JON 06
1160			ICPES	84NAD 01		32	3	35	TCGS	81GLA 04
1170	60	11	ICPES	82JON 01		34	2.8	11	ICPES	81MUN 01
1225	239		ITNA	77NAD 02		35			OES	75JON 09
1250	200		AA	83RAP 01		35	4		TCGS	84GLA 11
1280			ITNA	82GLA 02		35.5			ICPES	81GOO 01
1300	80		ITNA	80SLO 01		36	3		TCGS	82GLA 02
						36.1	1.5	11	ICPES	81MUN 01
<u>As (ng/g)</u>										
118	10	7	FAA	82HOE 02		38	0.1		ICPES	84PRI 01
170	10	7	FAA	82HOE 02		42			OES	75JON 11
180	40		ITNA	85NDI 01						
200	40		RTNA	80SLO 01						
225	3		RTNA	79HOE 01						
230	30	7	RTNA	80GAL 02		40			OES	75JON 03
230	30	11	HAA	81RAP 01		47			OES	75JON 04
240			IENA	84GLA 02		49			OES	75JON 11
240	25		RTNA	85GAU 04		56.5	11.24		NAA	76GUZ 01
245	5	7	FAA	82HOE 02		58			OES	75JON 05
250	30		HAA	81KNA 01		59			OES	75JON 01
250	30	11	HAA	81RAP 01		63	5		ITNA	77NAD 02
260			HAA	81ARA 01		63.4			ICPES	84NAD 01
260	30		ITNA	77NAD 02		66	3		ICPES	85WHI 02
260	30	11	HAA	81RAP 01		69	14		ITNA	79REN 03
260	80		HAA	81YAN 01						
270		H	ICPES	81PIC 01						
270	40		RTNA	86GAU 01						
270	50		MPOES	83SAR 01		26	10		ICPES	83SCH 03
290	10		AA	83RAP 01		38	4		FAAC	85GAU 04
290	10		COLOR	77BUR 01						
<u>Be (ng/g)</u>										
270										
270										

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Br (ug/g)</u>									
19	1.5	5	ITNA	80HOE 01	3.1			ITNA	82GLA 02
19.8	0.6	5	IENA	79GLA 02	3.1	0.03	11	ICPES	82JON 01
20.1	1.2	5	ITNA	80HOE 01	3.19			OES	75JON 06
20.3	1.1		CPXRF	84BIS 01	3.28			OES	75JON 01
20.8	2.4		ITNA	80SLO 01	3.41	0.09		ICPES	79HER 01
21	1.2	5	IENA	79GLA 02	3.49	0.12		ITNA	77NAD 02
21	3		ITNA	79REN 03	3.55			ICPES	84NAD 01
21.9	0.2		ITNA	77NAD 02	5.82			EXRF	81PAR 01
22.5			ITNA	85GAU 04					
24.6			ITNA	86GAU 01					
25.31	1		ITNA	77STE 02					
29	2	35	NAA	81GLA 03	1.6		11	FAA	80PRE 01
54			EXRF	81PAR 01	2.1		6	POL	72SIN 01
<u>C (%)</u>									
37.67	0.45		CB	82GLA 02	2.2		11	FAA	80PRE 01
37.8	0.9		CB	77WAT 02	2.3			ICPES	84NAD 01
37.92	0.26		CB	80SCH 02	2.3		11	FAA	80PRE 01
<u>Ca (%)</u>									
2.22	0.08		ITNA	80SLO 01	2.3		11	FAA	80PRE 01
2.38			OES	75JON 04	2.3			ASV	82GAJ 01
2.4	0.07		ITNA	79REN 03	2.3	0.1		ICPES	83SCH 03
2.42			OES	75JON 07	2.55	0.09	11	ICPES	82JON 01
2.43			OES	75JON 03	2.56	0.06	11	ICPES	82JON 01
2.55			OES	75JON 02	2.6	0.1	11	ICPES	82JON 01
2.62			OES	75JON 08	2.6	0.2		FAA	84GLA 11
2.64			OES	75JON 10	2.6	0.3	11	ICPES	81MUN 01
2.65	0.07	6	EXRF	79MAT 01	2.66	0.1		FAA	83DEL 01
2.7	0.02		CPXRF	84BIS 01	2.7			ASV	74COP 01
2.70	0.21		NAA	76GUZ 01	2.7	0.4		RTNA	80SLO 01
2.75	0.005	11	AA	75ISA 01	2.7	0.5	11	ICPES	81MUN 01
2.8			OES	75JON 11	2.74	0.2		ASV	82SAT 02
2.85			ICPES	81GOO 01	2.8	0.2		AA	80SCH 05
2.86	0.05	11	AA	84SUZ 03	2.8	0.2		FAA	84GLA 02
2.87	0.005	11	AA	75ISA 01	2.8	0.2	D	FAA	80SCH 08
2.88	0.27		ICPES	85LYO 01	2.9	0.1		FAA	81KNA 01
2.9	0.05	11	AA	84SUZ 03	2.94	0.15		AA	83RAP 01
2.91			OES	75JON 05	3	0.16		ICPES	83SCH 04
2.91	0.08		ICPES	85WHI 02	3.3	0.2		ICPES	79HER 01
2.92			OES	75JON 09					
2.92	0.08	6	EXRF	79MAT 01					
2.92	0.12	11	ICPES	81MUN 01					
2.93	0.045		ICPES	83SCH 03	1	0.1		RTNA	80SLO 01
2.99	0.05	11	ICPES	82JON 01	1.28	0.18		ITNA	86KRA 01
2.99	0.12	11	ICPES	81MUN 01	1.3	0.36		RTNA	83TJI 01
3.04	0.05	11	ICPES	82JON 01	1.559	0.114		RTNA	86TSU 01
3.08	0.05	11	ICPES	82JON 01					
<u>Ce (ug/g)</u>									

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Cl (%)</u>									
1.04	0.02		ITNA	80SLO 01	43	2		ITNA	77NAD 02
1.05	0.0725		ITNA	77STE 02	54	4		ITNA	84GLA 02
1.085	0.1201		NAA	76GUZ 01	56			ITNA	86GAU 01
1.1	0.07		ITNA	77NAD 02	56	6		ITNA	77GUZ 01
					58	4		ITNA	84GLA 11
<u>Co (ng/g)</u>									
400	106		NAA	76GUZ 01	64	21		ITNA	86KRA 01
467	25		ITNA	77GUZ 01	70	8		ITNA	85GAU 04
495			FAA	82HOE 01	140	30		ITNA	79REN 03
507	20		ITNA	86KRA 01	<u>Cu (ug/g)</u>				
510	10	11	FAA	80FUD 01	3			AA	81ARA 01
540	30		RTNA	80SLO 01	6.1	1.1		ITNA	85NDI 01
550	10	11	FAA	80FUD 01	6.9	0.7		CPXRF	84BIS 01
610	30		ITNA	77NAD 02	7.3	0.7		XRF	85AVA 01
680	30		ITNA	79REN 03	7.7		6	POL	72SIN 01
					7.7	0.5	6	POL	72SIN 01
<u>Cr (ug/g)</u>									
1.5	0.2	11	ICPES	81MUN 01	8			ICPES	81GOO 01
2.28	0.06	11	ICPES	82JON 01	8.2	0.4	11	ICPES	82JON 01
2.5	0.2	11	ICPES	81MUN 01	8.7	1.9		AA	84KAN 01
3			ICPES	81GOO 01	9			OES	75JON 02
3.1		11	AA	79HOE 02	9.4		6	NAA	72SIN 01
3.107	1.08		NAA	76GUZ 01	9.4			ICPES	81MUN 01
3.7	0.3		ITNA	82GLA 02	9.5	0.5	11	ICPES	83SCH 03
3.8	0.2	11	ICPES	82JON 01	9.7	0.3		ICPES	83SCH 04
3.8	0.3	35	FAA	81GLA 03	9.8	0.3		ICPES	82JON 01
3.8	0.61		ITNA	85NDI 01	9.8	0.4	11	ICPES	82JON 01
3.9	0.3		ITNA	77NAD 02	10			OES	75JON 03
3.9	1.1	11	CPXRF	84SIM 01	10.1	0.4		RTNA	74RAV 01
3.94		11	AA	79HOE 02	10.4	0.2		ICPES	79HER 01
4.3			FAA	82HOE 01	10.4	0.5	11	ICPES	82JON 01
4.3			AA	81ARA 01	10.5	0.6		VV	80SCH 05
4.3	0.2		AA	83RAP 01	10.5	0.8		RTNA	80SLO 01
4.3	0.5		ICPES	83SCH 03	10.6	0.1		IDMS	84BRO 03
4.4	0.2	11	CPXRF	84SIM 01	10.6	0.5		AA	83RAP 01
4.4	0.2	D	CPXRF	84SIM 02	10.7	0.4		ICPES	80SCH 08
4.5	1.6		ITNA	79REN 03	10.8	0.1		COLOR	76ZAN 02
4.53			ICPES	84NAD 01	10.81	0.02		COLOR	77BUR 01
4.6		11	AA	79HOE 02	10.9	0.1	D	AA	76ZAN 02
4.6	0.7		FAA	85GAU 04	10.9	0.1		AA	76ZAN 01
5.15	0.29		ITNA	86KRA 01	11			FAA	83ATS 01
5.9	0.2		ICPES	79HER 01	11	1	11	OES	75JON 04
					11	1	6	AF	84SUZ 03
					11	2	6	AF	83MCC 02
					11	2.4		CPAA	83MCC 02
					11.1	0.2	7	RTNA	85CAN 01
					11.2		11	AA	80GAL 02
					11.2	0.2		AA	79HOE 02
								AA	85KOJ 01

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g) cont.</u>						<u>Fe (ug/g)</u>				
11.5	0.2		AA	76EPS 02		55			OES	75JON 01
12		11	AA	79HOE 02		162			OES	75JON 09
12	0.14	11	AA	75ISA 01		207	6.3	11	AA	84SUZ 03
12	0.17	11	AA	75ISA 01		220			AA	81ARA 01
12.2	1.3	6	EXRF	79MAT 01		266			OES	75JON 06
13			OES	75JON 10		267			OES	75JON 03
13	0.7	11	AA	84SUZ 03		340			OES	75JON 02
13.5	0.4		AA	77GUZ 01		342			OES	75JON 04
14.1	1.3		ITNA	77GUZ 01		350			OES	75JON 11
14.1	5.64		NAA	76GUZ 01		361	50	11	ICPES	81MUN 01
15			OES	75JON 09		379			OES	75JON 08
15			OES	75JON 01		442	115	11	AA	75ISA 01
15			OES	75JON 11		450	17	11	AA	84SUZ 03
15			OES	75JON 06		463	157	11	AA	75ISA 01
15	3		AA	86GAU 01		469.25	118.3		NAA	76GUZ 01
17			OES	75JON 05		478			OES	75JON 05
17			OES	75JON 08		507.6	14.3		ITNA	77GUZ 01
20			OES	75JON 07		531	14	11	ICPES	82JON 01
25			EXRF	81PAR 01		534			OES	75JON 10
						546	19		ICPES	83SCH 03
						550	36		CPXRF	84BIS 01
<u>Dy (ng/g)</u>						552			OES	75JON 07
68	4		RTNA	86TSU 01		568	3		ICPES	79HER 01
<u>Er (ng/g)</u>						575	10	11	COLOR	82SCH 03
51	3		RTNA	86TSU 01		597		11	COLOR	82SCH 03
<u>Eu (ng/g)</u>						602	28	6	FAA	84FUD 02
15	2		ITNA	77GUZ 01		604	11	11	COLOR	82SCH 03
16	3		RTNA	83TJI 01		614	14	6	AF	83MCC 02
25	5		ITNA	77NAD 02		623	10	6	EXRF	79MAT 01
26	1		RTNA	86TSU 01		625	14	11	ICPES	82JON 01
27	7		ITNA	86KRA 01		632			ICPES	81GOO 01
55	8		RTNA	80SLO 01		636			ICPES	85LYO 01
<u>F (ug/g)</u>						642	17	11	ICPES	82JON 01
5	1		MS	77STE 02		657			ICPES	84NAD 01
5.4	1.3		ISE	85GAU 04		658	18.9		ICPES	82JON 01
5.7	0.2		ISE	83KNA 01		661	13	11	ICPES	82JON 01
6	0.7		ISE	84GLA 02		665	14		ITNA	77NAD 02
9			COLOR	83JAC 01		668	11	AA	79HOE 02	
						670	25	11	ICPES	81MUN 01
						672	50	35	ITNA	81GLA 03
5	1		MS	77STE 02		674	97		ITNA	86KRA 01
5.4	1.3		ISE	85GAU 04		675.8	18.9		CPAA	85CAN 01
5.7	0.2		ISE	83KNA 01		684	9	6	FAA	84FUD 02
6	0.7		ISE	84GLA 02		685	20	D	ICPES	80SCH 08
9			COLOR	83JAC 01		685	20		ICPES	80SCH 05
						685	50	6	AF	83MCC 02
						698			VOLT	81SZY 01
						705	30		AA	83RAP 01
						706	12		ITNA	79DAS 01
						706	12		RTNA	80SLO 01
						730	90		ITNA	79REN 03
						831	10	6	EXRF	79MAT 01
						1170			EXRF	81PAR 01

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Fe(II) (ug/g)</u>					<u>K (%)</u>				
540			VOLT	81SZY 01	2.68	0.26	11	ICPES	81MUN 01
					2.9			ICPES	84NAD 01
<u>Fe(III) (ug/g)</u>					3	0.29		ICPES	79HER 01
158			VOLT	81SZY 01	3.8			OES	75JON 02
					3.81			OES	75JON 10
<u>Ga (ng/g)</u>					3.85			OES	75JON 07
69.3	67		NAA	76GUZ 01	4.055		1	AA	78SZY 01
83			FAA	85XIA 01	4.15	0.08	1	ITNA	79REN 03
<u>Gd (ng/g)</u>					4.17			AA	78SZY 01
74	15		RTNA	83TJI 01	4.18		1	ITNA	86KRA 01
76	5		RTNA	86TSU 01	4.25			OES	75JON 04
<u>H (%)</u>					4.3	0.2	11	ICPES	82JON 01
					4.33			OES	75JON 08
5	0.1	35	TCGS	79GLA 04	4.34	0.18		ICPES	85WHI 02
5.1	0.2		CB	82GLA 02	4.34	0.23	11	ICPES	81MUN 01
5.14	0.07		CB	80SCH 02	4.39	0.09		CPXRF	84BIS 01
<u>Hf (ng/g)</u>					4.4	0.1	11	ICPES	82JON 01
250	20		ITNA	86KRA 01	4.4	0.2	11	ICPES	82JON 01
<u>Hg (ng/g)</u>					4.4272	0.2816		NAA	76GUZ 01
90	8		ITNA	77NAD 02	4.47	0.15		ITNA	80SLO 01
91	11		CVAA	82GLA 02	4.47	0.24		ITNA	77NAD 02
128	118		NAA	76GUZ 01	4.49			ICPES	79COO 01
<u>Ho (ng/g)</u>					4.51			OES	75JON 09
13	1		RTNA	86TSU 01	4.58			OES	75JON 03
<u>I (ng/g)</u>					4.58	0.0046	11	AA	75ISA 01
280	30		IENA	82SAT 01	4.6			OES	75JON 06
300	100		PAA	77WIL 01	4.6	0.0083	11	AA	75ISA 01
390	120		RTNA	77STE 02	4.6	0.2	11	ICPES	82JON 01
<u>In (ng/g)</u>					4.73	0.14	11	AA	84SUZ 03
0.96	0.08		RTNA	74RAV 01	4.74			OES	75JON 05
<u>La (ng/g)</u>					4.79	0.06	6	EXRF	79MAT 01
					4.8			OES	75JON 11
					4.81	0.09	11	AA	84SUZ 03
					5.16	0.06	6	EXRF	79MAT 01
					5.72			OES	75JON 01
					9.24			EXRF	81PAR 01

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Lu (ng/g)</u>					<u>Mn (ug/g) cont.</u>				
7	1		RTNA	83TJI 01	215	27		FAA	84KUR 01
9	1		RTNA	86TSU 01	216	17	11	AA	75ISA 01
12	2		RTNA	80SLO 01	217		11	AA	79HOE 02
					217	5	11	ICPES	82JON 01
					217	16	11	ICPES	81MUN 01
<u>Mg (ug/g)</u>					218	13	11	AA	75ISA 01
					219	7		ICPES	85WHI 02
5365			ICPES	81GOO 01	221	5	11	ICPES	82JON 01
6000			OES	75JON 08	222	5	11	ICPES	82JON 01
6000	600		ITNA	80SLO 01	223		11	AA	79HOE 02
6100	600		ICPES	79HER 01	223	7	6	EXRF	79MAT 01
6300			OES	75JON 09	224	2.6	11	AA	84SUZ 03
6400	400		ICPES	85LYO 01	225.6	17		ICPES	85LYO 01
6500	300		ICPES	85WHI 02	227			OES	75JON 05
6600			OES	75JON 07	227	7	6	AF	83MCC 02
6672	186	11	ICPES	81MUN 01	230			OES	75JON 03
6700	3	11	AA	75ISA 01	230	5	11	ICPES	82JON 01
6700	3	11	AA	75ISA 01	230	9	6	AF	83MCC 02
6700	200	11	ICPES	82JON 01	231	3.6	11	AA	84SUZ 03
6784	206	11	ICPES	81MUN 01	231	8	11	ICPES	81MUN 01
6800			ICPES	84NAD 01	231	10		ITNA	80SLO 01
6800			OES	75JON 10	232			ICPES	84NAD 01
6800	90		ICPES	83SCH 03	233	13		ICPES	83SCH 03
6900			OES	75JON 04	234	5		VV	80SCH 05
6900	200	11	ICPES	82JON 01	234	5	D	ICPES	80SCH 08
6900	200	11	ICPES	82JON 01	235	2		NM	84SUZ 01
7000			OES	75JON 03	235	4	6	FAA	84FUD 02
7000	100	11	AA	84SUZ 03	235	5		ICPES	79HER 01
7000	200	11	AA	84SUZ 03	236	5	6	FAA	84FUD 02
7000	200	11	ICPES	82JON 01	238	17		ITNA	77NAD 02
7100			OES	75JON 02	240	4		ICPES	83SCH 04
7300	100		ITNA	77NAD 02	241			OES	75JON 08
7400			OES	75JON 05	241	12		AA	83RAP 01
7400			OES	75JON 06	251			OES	75JON 01
7400			OES	75JON 11	252			ICPES	81GOO 01
7800			OES	75JON 01	266			ITNA	82GLA 02
					266	8	6	EXRF	79MAT 01
					414			EXRF	81PAR 01
<u>Mn (ug/g)</u>					<u>Mo (ug/g)</u>				
138			OES	75JON 07	0.4	0.2	11	ICPES	82JON 01
189			OES	75JON 10	0.5	0.1	11	ICPES	82JON 01
189			OES	75JON 04	0.5	0.1	11	ICPES	82JON 01
197			OES	75JON 09	0.5	0.1	11	ICPES	82JON 01
198			OES	75JON 06	0.5	0.3	11	ICPES	82JON 01
200			ITNA	79REN 03	0.62	0.04		ITNA	77NAD 02
200	9		CPXRF	84BIS 01	0.65	0.1		RTNA	80SLO 01
209.18	9.93		NAA	76GUZ 01	2.8			OES	75JON 10
209.2	11.9		ITNA	77GUZ 01	4.2			OES	75JON 11
210			OES	75JON 02	4.5			OES	75JON 03
211.1	2.1		AA	77GUZ 01	11.7			OES	75JON 01
215			OES	75JON 11	14.6			OES	75JON 07
					17.9			OES	75JON 02

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>N (%)</u>						<u>P (ug/g)</u>					
4.9	0.2	35	TCGS	79GLA 04		2400			OES	75JON 04	
4.94	0.11		CB	80SCH 02		2700			ICPES	84NAD 01	
4.95	0.08		CB	82GLA 02		2800			OES	75JON 10	
						3030			ICPES	81GOO 01	
						3100			OES	75JON 07	
						3200			OES	75JON 05	
326	18	11	ICPES	81MUN 01		3200	200	6	FAA	81LAN 01	
332	4.9	11	AA	84SUZ 03		3263	130	11	ICPES	81MUN 01	
337	13	11	ICPES	81MUN 01		3300			OES	75JON 09	
337	23	11	AA	84SUZ 03		3300			OES	75JON 08	
350			OES	75JON 04		3300			OES	75JON 11	
369	16		ICPES	85WHI 02		3300			OES	75JON 06	
388			OES	75JON 02		3300	200	6	FAA	81LAN 01	
459	46.1		NAA	76GUZ 01		3300	200		ICPES	85WHI 02	
475	25		ITNA	80SLO 01		3318	106	11	ICPES	81MUN 01	
488		1	AA	78SZY 01		3320	160		ICPES	81OWE 01	
500	200		ITNA	79REN 03		3400			OES	75JON 03	
520			ICPES	81GOO 01		3400			FAA	79EDI 01	
522	13		ITNA	77NAD 02		3400			ICPES	79EDI 01	
531			OES	75JON 08		3400	100	11	ICPES	82JON 01	
568			ICPES	84NAD 01		3400	200		CPAA	83MAS 02	
602		1	AA	78SZY 01		3420	89.5		NAA	76GUZ 01	
610			OES	75JON 06		3459	8		ICPES	84PRI 01	
618	18		ITNA	86KRA 01		3500	100	11	ICPES	82JON 01	
650			OES	75JON 03		3500	100	11	ICPES	82JON 01	
800			OES	75JON 01		3500	100	11	ICPES	82JON 01	
820			OES	75JON 09		3500	200	6	FAA	81LAN 01	
950			OES	75JON 05		3700	100		ICPES	79HER 01	
1090	70		ITNA	82SCH 05		3800			OES	75JON 02	
1600			OES	75JON 11		3900	200		ICPES	85LYO 01	
						5000			OES	75JON 01	
<u>Nd (ng/g)</u>						<u>Pb (ug/g)</u>					
566	59		RTNA	86TSU 01		3.2			6	POL	72SIN 01
580	140		RTNA	83TJI 01		4				ASV	74COP 01
700	100		RTNA	80SLO 01		4.3	0.2	11	ICPES	82JON 01	
						4.5	0.1	6	POL	72SIN 01	
						4.9		11	FAA	80PRE 01	
<	1.5	11	ICPES	81MUN 01		5.0	0.2	11	ICPES	82JON 01	
0.3	0.2		RTNA	80SLO 01		5.2	0.8		AA	84KAN 01	
1.1	0.08	11	ICPES	82JON 01		5.4		6	FAA	81JAC 01	
1.12	0.06	11	ICPES	82JON 01		5.5		11	FAA	79HOE 02	
1.12	0.08	11	ICPES	82JON 01		5.5	0.4		FAA	80LEG 01	
1.2	0.3		ITNA	77NAD 02		5.6		6	FAA	81JAC 01	
1.3	0.2	11	ICPES	82JON 01		5.6	0.2		ASV	82SAT 02	
1.5	0.8	11	ICPES	81MUN 01		5.7		11	FAA	79HOE 02	
1.7	0.4		ICPES	83SCH 03		5.8		6	FAA	81HIN 01	
5.9	0.6		ICPES	79HER 01		5.8		6	FAA	82KOI 01	
						5.8		6	FAA	81HIN 01	

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Pb (ug/g) cont.</u>						<u>S (ug/g)</u>				
5.8		6	FAA	82KOI 01		5500	300	CB	84GLA 11	
5.8	0.8		HAA	82WEI 01		5848	58	ICPES	84PRI 01	
5.9		11	FAA	80PRE 01		5860	270	CB	86BOW 01	
5.9	0.5		XRF	85AVA 01		5960	150	WXRF	86BOW 01	
5.95	0.06		FAA	79DAB 02		6260		D	CB	85JAC 01
6			FAA	82HOE 01		6260	100	6	CB	84JAC 01
6		11	FAA	80PRE 01		6360	190		CB	86GAU 01
6			ASV	82GAJ 01		6550		D	CB	85JAC 01
6.0	0.5		FAA	84GLA 11		6550	90	6	CB	84JAC 01
6.03	0.15		IDMS	83BRO 01		6900	300		ICPES	85WHI 02
6.1			FAA	83HOE 01						
6.1		11	FAA	79HOE 02		<u>Sb (ng/g)</u>				
6.1	0.3		AA	80SCH 05		30	1		RTNA	79HOE 01
6.1	0.3	D	FAA	80SCH 08		30	2		RTNA	80KOS 02
6.2			FAA	80PRE 01		34			HAA	82KUE 03
6.2	0.3		FAA	81KNA 01		40	2		ITNA	77NAD 02
6.23	0.97		CPAA	85CAN 01		46	20		ITNA	86KRA 01
6.3		11	FAA	80PRE 01		120	30	7	RTNA	80GAL 02
6.3	0.5		ICPES	83SCH 03		120	50		ITNA	79REN 03
6.4	0.1		AA	83RAP 01						
6.4	0.3		FAA	82ATS 02						
6.55	0.22		ASV	80SZY 01		<u>Sc (ng/g)</u>				
6.6			FAA	82PRE 01		138	7		ITNA	77GUZ 01
7.1	0.9		FAA	82WEI 01		151	4		ITNA	84GLA 11
7.5		11	FAA	80PRE 01		160	30		ITNA	79REN 03
7.6	3.1		FAA	85GAU 04		164	16		ITNA	86GAU 01
8.1	1.8	11	ICPES	81MUN 01		170	3		ITNA	77NAD 02
8.3	1.1		ICPES	79HER 01		175	1		ITNA	85GAU 04
9.1	2.9	11	ICPES	81MUN 01		175	4		ITNA	86KRA 01
15			EXRF	81PAR 01		208	89		NAA	76GUZ 01
						220	30		RTNA	80SLO 01
<u>Pd (ng/g)</u>						<u>Se (ng/g)</u>				
<	2		RTNA	85BEM 01		49	5		ITNA	77NAD 02
						50	20		RTNA	80KNA 01
184	11		RTNA	86TSU 01		57	3	11	GC	81UCH 02
190	40		RTNA	80SLO 01		61	2	11	GC	81UCH 02
						84	15	9	ITNA	80WAN 01
<u>Rb (ug/g)</u>						<u>Si (ug/g)</u>				
15.16	1.35		NAA	76GUZ 01		3000			ICPES	84NAD 01
15.21	2.3		ITNA	79REN 03						
16.4	0.5		ITNA	77GUZ 01						
16.5	0.7		ITNA	77NAD 02		<u>Sm (ng/g)</u>				
16.8	0.9		ITNA	86KRA 01		81	3		RTNA	86TSU 01
19.2	1.8		CPXRF	84BIS 01		86	27		RTNA	83TJI 01
22	3	35	ITNA	81GLA 03		110	15		RTNA	80SLO 01
40			EXRF	81PAR 01		200	90		ITNA	79REN 03

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sr (ug/g)</u>						<u>V (ug/g)</u>				
35.6	1.4	IENA	85GAU	04		0.31	0.045	11	RTNA	82HEY 02
36	0.6	ICPES	79HER	01		0.87	0.013	11	RTNA	82HEY 02
38		OES	75JON	04		0.888	0.013	11	RTNA	82HEY 02
38		OES	75JON	03		1.19	0.01	11	ICPES	82JON 01
42.2	0.8	AA	86GAU	01		1.27	0.035		RTNA	78BYR 01
42.9	0.5	CPAA	85CAN	01		1.297	0.112		ITNA	82HEY 02
43.7	0.2	AA	85GAU	04		1.3	0.2		ITNA	77NAD 02
44	2	CPXRF	84BIS	01		1.42	0.08	11	ICPES	82JON 01
44.8	0.5	CPAA	85MAS	01		1.5	0.2		ICPES	83SCH 03
45	1	ITNA	77NAD	02						
45.3	0.4	IDNAA	85YAG	01		<u>W (ng/g)</u>				
54		OES	75JON	01						
65.5	5.84	NAA	76GUZ	01	<	40	L		RTNA	80SLO 01
102		EXRF	81PAR	01						
<u>Ta (ng/g)</u>						<u>Yb (ng/g)</u>				
430	300	ITNA	79REN	03		47	10		RTNA	83TJI 01
						63	4		RTNA	86TSU 01
						80	20		RTNA	80SLO 01
<u>Tb (ng/g)</u>						<u>Zn (ug/g)</u>				
4	1	RTNA	80SLO	01						
12	2	RTNA	86TSU	01		26			OES	75JON 09
12	4	RTNA	83TJI	01		29			ASV	74COP 01
						48			OES	75JON 10
<u>Th (ng/g)</u>						50			OES	75JON 03
190	20	ITNA	77NAD	02		52	1	11	ICPES	82JON 01
220	30	RTNA	80SLO	01		53			FAA	83ATS 01
						54	4		RTNA	80SLO 01
						55	3		XRF	85AVA 01
<u>Ti (ug/g)</u>						56	2	11	ICPES	82JON 01
12.6	1	ICPES	83SCH	03		56.8	7.3		ICPES	85LYO 01
68	9	ITNA	77NAD	02		57	2	11	ICPES	82JON 01
89	8	COLOR	84GLA	11		58			OES	75JON 06
						58	1.5	11	AA	84SUZ 03
<u>Tl (ng/g)</u>						58	4	6	AF	83MCC 02
20	11	ASV	84LIE	01		58.03	3.33		NAA	76GUZ 01
24	11	ASV	84LIE	01		58.9			AA	79HOE 02
						59			ICPES	81GOO 01
						59			OES	75JON 11
<u>U (ng/g)</u>						59	2	11	ICPES	82JON 01
20	20	RTNA	80SLO	01		59	3		AA	83RAP 01
50.2	2.3	RTNA	78DER	01		59.5	2.2		ICPES	83SCH 03
54		DNA	84GLA	02		60			OES	75JON 02
60	120	R*	DNA	81GLA	03	60	2	6	AF	83MCC 02
63	3	35	DNA	80GLA	04	60	3	11	ICPES	82JON 01
63	4	DNA	86GAU	01		61			AA	72SIN 01
63	6	DNA	85GAU	04		61	3		ICPES	85WHI 02

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Zn (ug/g) cont.</u>					
62	3	11	ICPES	82JON 01	
62	4		ITNA	77NAD 02	
62	4.6		ITNA	79REN 03	
62.5			AA	81ARA 01	
62.5	1.2		CPAA	85CAN 01	
62.9		6	POL	72SIN 01	
62.9	1.7	6	POL	72SIN 01	
63	2.5	11	AA	75ISA 01	
63.5	1.5	11	ICPES	81MUN 01	
64	3	11	ICPES	82JON 01	
65			OES	75JON 07	
65			OES	75JON 05	
65	3.25	11	AA	75ISA 01	
65	7		ICPES	80SCH 05	
65	7	D	ICPES	80SCH 08	
66	2.2	11	AA	84SUZ 03	
66.4	8		CPXRF	84BIS 01	
66.6	4.6	11	ICPES	81MUN 01	
68		11	AA	79HOE 02	
68			FAA	83ATS 01	
68.5	1.7		ITNA	86KRA 01	
71	2		ICPES	83SCH 04	
72.8	2	6	EXRF	79MAT 01	
73	3		ICPES	79HER 01	
75			OES	75JON 08	
78	2.1	6	EXRF	79MAT 01	
86			OES	75JON 04	
124			EXRF	81PAR 01	

TABLE 1575-1: COMPILED DATA FOR NBS SRM 1575 PINE NEEDLES (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA	Mean ± SD (n)	NAA	Mean ± SD (n)	ICPES	OTHER METHODS						
			Mean ± SD	Mean ± SD (n)								Mean ± SD	SD	(n)	Mean ± SD (n)	SD	Method	
Ag	ng/g	---	150	(1)	---	---	---	150	(1)	---	---	---	---	---	---	---	OES	
Al	ug/g	545 ± 30	510 ± 60	(24)	521	399 - 620	558 ± 26 (3)	600 ± 80 (6)	500 ± 60 (7)	658 (2)	XRF	420 ± 100 (8)	(8)	OES	---	---	---	
Al	ug/g	---	---	---	---	---	---	---	---	452.7 (2)	COLOR	---	---	---	210 (1)	COLOR	---	
As	ng/g	210 ± 40	207 ± 18	(22)	200	180 - 240	205 ± 17 (11)	212 ± 20 (9)	0.6	193 (1)	---	---	---	---	---	---	---	
Au	ug/g	---	0.6	(2)	---	0.3 - 0.9	---	16	(1)	16 ± 2	(4)	17.4 ± 3 (10)	(10)	OES	---	---	---	
B	ug/g	---	17 ± 2	(18)	17	13 - 20	---	---	---	17.4 ± 1.5 (3)	TCGS	---	---	---	---	---	---	
B	ug/g	---	---	---	---	---	---	---	---	17.4 ± 0.8 (4)	OES	---	---	---	---	---	---	
Ba	ug/g	---	7.2 ± 0.8	(8)	7	6 - 8.4	---	7.25	(2)	7.45 (2)	7.0 ± 0.8 (4)	OES	---	---	---	---	---	
Br	ug/g	9	6.9 ± 0.9	(12)	6.8	5.4 - 8.6	---	7.0 ± 0.8 (10)	---	6.24 (2)	XRF	---	---	---	---	---	---	
C	%	---	50.49 ± 0.18	(3)	50.4	50.37 - 50.7	---	---	---	50.49 ± 0.18 (3)	CB	---	---	---	---	---	---	
Ca	ug/g	4100 ± 200	4200 ± 360	(28)	4182	3600 - 5000	4660	(1)	4290 ± 180 (4)	4130 ± 230 (11)	3765 (2)	XRF	4300 ± 600 (9)	(9)	OES	4290 (1)	NM	---
Ca	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Cd	ng/g	< 500	220 ± 60	(20)	200	140 - 340	240 ± 60 (9)	193 ± 13 (3)	210 ± 70 (8)	210 ± 70 (8)	---	---	---	---	---	---	---	
Ce	ng/g	400	210 ± 50	(3)	210	150 - 258	---	210 ± 50 (3)	---	210 ± 50 (3)	---	---	---	---	---	---	---	
Cl	ug/g	---	280 ± 30	(5)	280	243 - 305	---	270 ± 25 (4)	---	270 ± 25 (4)	---	305 (1)	XRF	---	---	---	---	
Co	ng/g	100	122 ± 14	(6)	110	110 - 140	110 (1)	128 ± 13 (4)	110 (1)	110 (1)	---	---	---	---	---	---	---	
Cr	ug/g	2.6 ± 0.2	2.6 ± 0.2	(16)	2.58	2.2 - 3.1	2.5 ± 0.2 (6)	2.57 ± 0.15 (3)	2.5 ± 0.4 (7)	2.57 ± 0.4 (7)	2.58 (1)	XRF	---	---	---	---	---	---
Cs	ng/g	---	110 ± 10	(6)	104	101 - 126	---	110 ± 10 (6)	---	110 ± 10 (6)	---	---	---	---	---	---	---	
Cu	ug/g	3.0 ± 0.3	3.0 ± 0.4	(34)	3	2 - 4.5	3.3 ± 0.3 (9)	2.9 ± 0.4 (4)	2.7 ± 0.3 (11)	3.06 ± 0.10 (3)	XRF	2.8 (1)	F&E	2.8 (1)	DCPES	3.2 (1)	---	
Cu	ug/g	---	---	---	---	---	---	---	---	2.91 ± 0.02 (3)	COLOR	---	---	---	---	---	---	
Cu	ug/g	---	---	---	---	---	---	---	---	5.9 ± 2.2 (9)	OES	---	---	---	---	---	---	
Eu	ng/g	6	5.5 ± 1.3	(3)	6	4 - 6.5	---	5.5 ± 1.3 (3)	---	---	---	2	(1)	COLOR	2 (1)	---	---	
F	ug/g	---	2.8 ± 0.7	(4)	2.5	2 - 3.7	---	---	---	3.7 (1)	HS	2.7 (2)	ISE	2.7 (2)	---	---	---	
Fe	ug/g	200 ± 10	185 ± 26	(36)	188	118 - 254	196 ± 13 (4)	203 ± 40 (6)	189 ± 22 (12)	192 ± 4 (4)	XRF	170 ± 60 (9)	OES	170 ± 60 (9)	OES	198 (1)	AF	---
Fe	ug/g	---	---	---	---	---	---	---	---	181 ± 12 (3)	COLOR	198 (1)	---	---	---	---	---	
Gd	ng/g	---	28	(1)	---	---	---	28	(1)	---	---	6.5 (1)	TCGS	6.46 (2)	CB	6.46 (2)	---	
H	%	---	6.48 ± 0.08	(3)	6.5	6.39 - 6.54	---	---	---	6.5 (1)	TCGS	6.46 (2)	CB	6.46 (2)	---	---	---	
H2O-	%	---	4.4	(1)	---	---	---	---	---	---	---	4.4 (1)	GRAV	4.4 (1)	GRAV	4.4 (1)	---	
Hf	ng/g	---	23	(2)	---	10 - 36	---	23	(2)	---	---	---	---	---	---	---	---	
Hg	ng/g	150 ± 50	144 ± 16	(5)	147	121 - 160	146 ± 12 (3)	140 (2)	145 (2)	---	---	---	---	---	---	---	---	
I	ng/g	---	145	(2)	---	140 - 150	---	145 (2)	---	---	---	---	---	---	---	---	---	
K	ug/g	3700 ± 200	3670 ± 310	(20)	3700	2700 - 5100	---	4100 ± 700 (4)	3630 ± 200 (9)	3700 (2)	XRF	3800 ± 800 (7)	OES	3800 ± 800 (7)	OES	---	---	
La	ng/g	200	160 ± 40	(5)	141	130 - 210	---	160 ± 40 (5)	---	160 ± 40 (5)	---	---	---	---	---	---	---	
Li	ng/g	---	340	(1)	---	---	---	340 (1)	---	---	---	---	---	---	---	---	---	
Lu	ng/g	---	1.6 ± 0.6	(3)	1.3	1.2 - 2.2	---	1.6 ± 0.6 (3)	---	1.6 ± 0.6 (3)	---	---	---	---	---	---	---	

TABLE 1575-1: COMPILED DATA FOR NBS SRM 1575 PINE NEEDLES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	OTHER METHODS				
			Mean ± SD	n						SD	n	Method	SD (n) Method	
Mg	ug/g	---	1220 ± 160	(24)	1200	900 - 1600	---	1340 ± 150	(3)	1150 ± 70	(11)	1320 ± 230	(10) OES	
Mn	ug/g	675 ± 15	650 ± 70	(34)	670	430 - 738	677 ± 20	(4)	684 ± 17	(4)	663 ± 32	(13)	1070 ± 750	(4) XRF
Mn	ug/g	---	---	---	---	---	---	0.1	(1)	0.16 ± 0.05	(4)	2.3 ± 1.0	(4) OES	
Mo	ug/g	---	0.15 ± 0.05	(5)	0.13	0.1 - 0.2	---	---	---	1.16	(2)	CB	1.3 (1) DCPS	
N	%	1.2	1.20 ± 0.10	(3)	1.2	1.11 - 1.3	---	---	---	59 ± 36	(7)	OES	---	
Na	ug/g	---	50 ± 30	(17)	37	18 - 105	---	46 ± 18	(5)	40 ± 37	(5)	---	---	
Nd	ng/g	---	164	(2)	---	128 - 200	---	164	(2)	2.30 ± 0.08	(6)	2.50	(2) XRF	
Ni	ug/g	3.5	2.5 ± 0.3	(13)	2.31	2.2 - 3.3	3.3	(1)	2.25	---	---	2.63 (1) VOLT		
Ni	ug/g	---	---	---	---	---	---	---	---	---	---	2.9 (1) DCPS		
P	ug/g	1200 ± 200	1190 ± 110	(25)	1170	1000 - 1410	1255	(2)	---	1170 ± 60	(13)	1145	(2) XRF	
P	ug/g	---	---	---	---	---	---	---	---	---	---	1240 ± 150	(7) OES	
Pb	ug/g	10.8 ± 0.5	10.7 ± 0.5	(29)	10.8	9.6 - 11.9	10.8 ± 0.4	(20)	---	11.3 ± 1.8	(6)	8.6 ± 1.5	(3) XRF	
Pb	ug/g	---	---	---	---	---	---	---	---	---	---	10.6 (1) IOMS		
Pd	ng/g	---	< 2	---	---	---	---	< 2	---	---	---	10.7 (2) ASV		
Pr	ng/g	---	< 70	---	---	---	---	< 70	---	---	---	---		
Rb	ug/g	11.7 ± 0.1	11.7 ± 1.0	(6)	11	10.8 - 13.1	---	11.6 ± 0.8	(4)	12.0 (2) XRF	---	---		
S	ug/g	---	1320 ± 110	(9)	1250	1200 - 1500	---	184 ± 4	(3)	202 ± 17	(9)	1220 ± 430	(4) XRF	
Sb	ng/g	200	198 ± 17	(12)	189	180 - 220	---	---	---	1400	(1)	1240 ± 30	(5) CB	
Sc	ng/g	30	41 ± 8	(6)	39	27 - 53	---	41 ± 8	(6)	---	---	---		
Se	ng/g	---	47 ± 5	(5)	44	43 - 53	---	49 ± 4	(3)	---	---	4.3 (2) GC		
Si	ug/g	---	814	(2)	---	248 - 1380	---	---	---	814	(2)	XRF	---	
Sm	ng/g	---	20 ± 2	(3)	20	18 - 21	---	20 ± 2	(3)	---	---	---		
Sr	ug/g	4.8 ± 0.2	5.0 ± 0.4	(7)	4.9	4.45 - 5.5	---	5.4	(1)	4.82	(2)	4.98	(2) XRF	
Sr	ug/g	---	---	---	---	---	---	---	---	---	---	4.7 (1) AF		
Ta	ng/g	---	13	(1)	---	---	---	13	(1)	---	---	---		
Tb	ng/g	---	31	(2)	---	2 - 60	---	31	(2)	---	---	---		
Th	ng/g	37 ± 3	40 ± 9	(3)	35	34 - 50	---	40 ± 10	(3)	---	---	---		
Ti	ug/g	---	13.7	(1)	---	---	---	---	---	13.7	(1) XRF	---		
Tl	ng/g	50	29 ± 2	(5)	29	27 - 31	29	(1)	---	29.0 ± 1.8	(6) ASV	---		
U	ng/g	20 ± 4	16 ± 3	(6)	15	13 - 20	---	16 ± 2	(6)	---	---	---		
V	ng/g	---	390 ± 70	(8)	370	248 - 470	---	380 ± 90	(6)	390	(2)	---		
W	ng/g	---	50	(1)	---	---	---	50	(1)	---	---	---		
Yb	ng/g	---	17.5	(2)	---	9 - 26	---	17.5	(2)	---	---	---		
Zn	ug/g	---	67 ± 9	(33)	66	51 - 87	65	(1)	58 ± 6	(4)	60 ± 7	(6) XRF		
Zn	ug/g	---	---	---	---	---	---	---	---	71	(1) DCPS	---		

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>										
150	50		RTNA	80SLO 01		210	10		COLOR	77BUR 01
<u>Al (ug/g)</u>										
255		OES	75JON 11			210	20		HAA	84NAR 01
287		OES	75JON 02			215	6		HAA	81UTH 01
399		ICPES	81GOO 01			220	20	7	RTNA	80GAL 02
405		OES	75JON 06			230			FAA	80DUP 01
439	18	11	ICPES	81MUN 01		240	20	7	RTNA	77GIL 03
443.9	20.4	6	COLOR	85BAR 01		240	20	7	RTNA	80GAL 02
449		OES	75JON 07			<u>Au (ng/g)</u>				
461.5	16.6	6	COLOR	85BAR 01		0.3	0.08		ITNA	79REN 03
465		OES	75JON 05			0.9	0.1		RTNA	80SLO 01
473		OES	75JON 08			<u>B (ug/g)</u>				
483		OES	75JON 04			13			OES	75JON 08
495		ICPES	84NAD 01			13			OES	75JON 09
498	15	11	ICPES	81MUN 01		13.3	0.7		ICPES	79HER 01
521		OES	75JON 03			15			OES	75JON 02
526	17	11	ICPES	82JON 01		15			OES	75JON 05
529	6	ITNA	84GLA 11			16	4		ITNA	82SCH 05
532	20	AA	83RAP 01			16.1	0.1		TCGS	82GLA 02
553	12	ITNA	86KRA 02			17			OES	75JON 01
558		FAA	86KRA 02			17			ICPES	81MUN 01
560	10	ICPES	83SCH 04			17	1	35	TCGS	81GLA 04
565	44	ITNA	77NAD 02			17.2	1.4	11	OES	75JON 06
575.1	1	ICPES	84FOG 01			17.6	0.7	11	ICPES	81GOO 01
582	47	CPXRF	80KIR 01			18			ICPES	84GLA 11
585		AA	81ARA 01			18			OES	75JON 07
590	50	ITNA	85GAU 04			19			OES	75JON 04
620	35	ITNA	81GLA 03			19	1		TCGS	84GLA 11
734		CPXRF	84KAU 01			20			OES	75JON 03
750	200	ITNA	80SLO 01			20			OES	75JON 11
1243		OES	75JON 01			20			TCGS	85WHI 02
<u>As (ng/g)</u>										
150	50		RTNA	80SLO 01		<u>Ba (ug/g)</u>				
154	5	7	FAA	82HOE 02		3			OES	75JON 03
180	15	7	FAA	82HOE 02		6			OES	75JON 05
181	3		RTNA	79HOE 01		6.1	0.4		ITNA	77NAD 02
187	6	7	FAA	82HOE 02		7			OES	75JON 11
190	10	11	HAA	82JON 01		7			ICPES	84MIA 01
190	30	11	HAA	82JON 01		7.1			OES	75JON 04
193			ICPES	84XIA 01		7.8	4		ICPES	84NAD 01
200			FAA	84XIA 01		8			OES	75JON 01
200	20	7	RTNA	80GAL 02		8.4	2.5		ITNA	85GAU 04
200	20	7	RTNA	77GIL 03						
200	30		ITNA	77NAD 02						
200	50		AA	83RAP 01						
205	22		ITNA	85GAU 04						

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>Br (ug/g)</u>					<u>Ca (ug/g) cont.</u>						
5.4	1.2		CPXRF	80KIR 01		4800		OES	75JON 04		
6.1	0.09		ITNA	79REN 03		4900		OES	75JON 01		
6.25	0.2		ITNA	80HOE 01		5000		ICPES	81GOO 01		
6.4	0.8	5	IENA	79GLA 02		5300		OES	75JON 08		
6.43	0.08		ITNA	77NAD 02		13100		EXRF	81PAR 01		
6.8	0.5	5	IENA	79GLA 02			<u>Cd (ng/g)</u>				
6.9	0.2		ITNA	85GAU 04							
7.08			CPXRF	84KAU 01			140	70	11	ICPES	82JON 01
7.4	0.3		ITNA	77STE 02		150	20			ICPES	84FOG 01
7.6			ITNA	86GAU 01		160	90	11		ICPES	82JON 01
8			ITNA	84GLA 02		180	30			RTNA	80SLO 01
8.6			ITNA	84GLA 11		180	90	11		ICPES	82JON 01
30			EXRF	81PAR 01		185	17			FAA	84GLA 11
<u>C (%)</u>						193	10	7		RTNA	80GAL 02
						193	30			AA	86GAU 01
50.37	0.16		CB	80SCH 02		200				FAA	80PRE 01
50.4	1.5	35	CB	79GLA 04		200	20			ICPES	83SCH 04
50.7	0.9		CB	82GLA 02		206	10			RTNA	77DER 01
54	2	35	TCGS	79GLA 04		210				FAA	82PRE 01
<u>Ca (ug/g)</u>						220	30			FAA	84GLA 02
						250	10			FAA	80LEG 01
						260	10			ICPES	79HER 01
3100	200		ITNA	80SLO 01		300	40	D		FAA	80SCH 08
3300			OES	75JON 07		300	40			AA	80SCH 05
3600			ICPES	84NAD 01		300	100	11		ICPES	82JON 01
3700	500		CPXRF	80KIR 01		300	200	11		ICPES	81MUN 01
3800			OES	75JON 02		310	30			FAA	81KNA 01
3800			OES	75JON 11		340	30			AA	83RAP 01
3800			OES	75JON 05							
3830			CPXRF	84KAU 01		<u>Ce (ng/g)</u>					
3900			OES	75JON 09							
4000			OES	75JON 06		150	30			RTNA	80SLO 01
4000	30		ICPES	84FOG 01		220	50			ITNA	85GAU 04
4000	100	11	ICPES	82JON 01		258	27			RTNA	83TJI 01
4070	120		ITNA	85GAU 04							
4090	20	11	ICPES	82JON 01		<u>Cl (ug/g)</u>					
4100	30	11	ICPES	82JON 01							
4110	30	11	ICPES	82JON 01		243	20			ITNA	77NAD 02
4182	67	11	ICPES	81MUN 01		260				ITNA	84GLA 11
4200	100		ICPES	85WH1 02		280	30			ITNA	80SLO 01
4290	40		NM	81YUZ 01		300	20			ITNA	85GAU 04
4290	60		ICPES	79HER 01		305				CPXRF	84KAU 01
4300			ITNA	84GLA 11		510	120			CPXRF	79REN 02
4300	600		ITNA	79REN 03		551	37			ITNA	77STE 02
4316	157	11	ICPES	81MUN 01							
4500	400		ICPES	85LYO 01							
4500	400		ITNA	77NAD 02							
4600			OES	75JON 03							
4660			AA	84GLA 02							

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Co (ng/g)</u>						<u>Cu (ug/g)</u>				
110			FAA	82HOE 01		0.7			OES	75JON 09
110			RTNA	80SLO 01		2			ICPES	81GOO 01
110	20		ICPES	84FOG 01		2			OES	75JON 02
130	20		ITNA	77NAD 02		2.3			FAA	83ATS 01
134	6		ITNA	77GUZ 01		2.3	0.7	11	ICPES	81MUN 01
140	20		ITNA	85GAU 04		2.41	0.09		RTNA	77DER 01
340	180		ITNA	79REN 03		2.5	0.3	11	ICPES	82JON 01
						2.7	0.2	11	ICPES	82JON 01
<u>Cr (ug/g)</u>						2.8	0.1		AA	83RAP 01
						2.8	0.3		FAE	76EPS 01
1.3	0.2	11	ICPES	82JON 01		2.8	0.5	11	ICPES	81MUN 01
1.5	0.3	11	ICPES	81MUN 01		2.9	0.1		COLOR	76ZAN 02
1.8			ICPES	84NAD 01		2.9	0.1		COLOR	76EPS 01
2.2	0.5	11	ICPES	81MUN 01		2.9	0.2		ICPES	83SCH 04
2.25		11	AA	79HOE 02		2.9	0.2	11	ICPES	82JON 01
2.25		11	AA	79HOE 02		2.94	0.01		COLOR	77BUR 01
2.39		11	AA	79HOE 02		2.98	0.16	7	RTNA	80GAL 02
2.41	0.11		ITNA	77NAD 02		3	0.1		ICPES	80SCH 08
2.5			ICPES	81GOO 01		3	0.15		ICPES	81KNA 01
2.5	0.1		AA	83RAP 01		3	0.3		AA	76ZAN 01
2.58			CPXRF	84KAU 01		3	0.3	D	AA	76ZAN 02
2.6			AA	82WIL 04		3	0.3		VV	80SCH 05
2.6	0.1		ITNA	82GLA 02		3	0.3		XRF	83PEL 01
2.6	0.2		ICPES	81KNA 01		3	0.5	11	ICPES	82JON 01
2.62	0.2		ICPES	84FOG 01		3	0.52		CPXRF	80KIR 01
2.7	0.2		ITNA	85GAU 04		3.01	0.5		ICPES	84FOG 01
2.8			FAA	82HOE 01		3.04	0.16	7	RTNA	80GAL 02
2.9	0.2	11	ICPES	82JON 01		3.17			CPXRF	84KAU 01
3.1	0.6		ICPES	79HER 01		3.2	0.2		DCPES	79REE 01
3.93	0.05		ITNA	79REN 03		3.2	0.2	D	DCPES	81REE 01
4.48	0.19		FAA	83CAR 02		3.2	0.4		AA	76EPS 02
						3.2	0.4		AA	84KAN 01
<u>Cs (ng/g)</u>						3.2	0.4		AA	76EPS 01
						3.27	0.05		RTNA	80SLO 01
101	3		ITNA	77NAD 02		3.45		11	AA	79HOE 02
102	7		ITNA	84GLA 11		3.55		11	AA	79HOE 02
104	4		ITNA	84GLA 02		3.6	0.3		FAA	82KRI 01
109	3		ITNA	86GAU 01		3.7			AA	85KOJ 01
115	7		ITNA	77GUZ 01		4			OES	75JON 04
126	18		ITNA	85GAU 04		4.1	0.8		ICPES	79HER 01
160	60		ITNA	79REN 03		4.5			OES	75JON 07
						5			OES	75JON 06
						6			OES	75JON 08
						8			OES	75JON 11
						8			OES	75JON 05
						8			OES	75JON 03
						11			AA	81ARA 01
						53			XRF	80SUZ 02

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Eu (ng/g)</u>										
4	1		RTNA	83TJI 01		209			AA	82WIL 04
6	2.6		ITNA	77GUZ 01		214.5	21.9		ICPES	85LYO 01
6.5	0.8		ITNA	77NAD 02		217	8	11	ICPES	81MUN 01
11.3	1.6		ITNA	85GAU 04		254			OES	75JON 05
						260			OES	75JON 04
<u>F (ug/g)</u>										
2			COLOR	83JAC 01		280	50		ITNA	79REN 03
2.5	0.3		ISE	83KNA 01		595			AA	81ARA 01
2.9	0.8		ISE	84GLA 02		790			EXRF	81PAR 01
3.7	0.8		MS	77STE 02						
<u>Fe (ug/g)</u>										
47			OES	75JON 09		28	7		RTNA	83TJI 01
100	10	11	ICPES	81MUN 01						
106			OES	75JON 06		6.39	0.07		CB	80SCH 02
118			OES	75JON 02		6.5	0.1	35	TCGS	79GLA 04
120			OES	75JON 03		6.54	0.08		CB	82GLA 02
142			OES	75JON 11						
152			ICPES	84NAD 01						
152			ICPES	81GOO 01		4.4			D	GRAV 85NAR 03
156			OES	75JON 01		4.4			GRAV	84NAR 01
170	10		ITNA	79DAS 01						
170	10		RTNA	80SLO 01						
174	0.9	11	COLOR	82SCH 03						
174	6	11	COLOR	82SCH 03		10			RTNA	80SLO 01
175	7	11	ICPES	82JON 01		36	17		ITNA	85GAU 04
177	4	11	ICPES	82JON 01						
182			OES	75JON 08						
183	3		ICPES	79HER 01						
185		11	AA	79HOE 02		121	6		ITNA	77NAD 02
185		11	AA	79HOE 02		133		11	CVAA	79HOE 02
188	9		XRF	85AVA 01		147	8		CVAA	82GLA 02
188	17		CPXRF	80KIR 01		157	18		CVAA	80DUM 01
193			OES	75JON 07		160	20		RTNA	80SLO 01
194	4	11	ICPES	82JON 01						
194	6	11	COLOR	82SCH 03						
194	10		ICPES	80SCH 05						
195			CPXRF	84KAU 01			<	200	L	PAA 77WIL 01
195	10	11	ICPES	82JON 01		140	20		IENA	82SAT 01
195	10	D	ICPES	80SCH 08		150	50		RTNA	77STE 02
195.7	5.4		ITNA	77GUZ 01						
196	7		ITNA	77NAD 02						
196	13		XRF	83PEL 01						
198	8		AF	81HOR 01						
204	10		ITNA	85GAU 04						
204	12		ICPES	81KNA 01						
207	0.8		ICPES	84FOG 01						
207	12		AA	83RAP 01						

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>K (ug/g)</u>					<u>Mg (ug/g)</u>				
2700			OES	75JON 05	900			OES	75JON 09
3000			ICPES	84NAD 01	1000			ICPES	84NAD 01
3200			OES	75JON 09	1025			ICPES	81GOO 01
3300	100		ICPES	79HER 01	1070			CPXRF	84KAU 01
3400	200	11	ICPES	82JON 01	1100	100		ICPES	79HER 01
3500	500		CPXRF	80KIR 01	1140	19	11	ICPES	81MUN 01
3530	80	11	ICPES	82JON 01	1180	30	11	ICPES	82JON 01
3600			ICPES	79COO 01	1190	20	11	ICPES	82JON 01
3600	100		ITNA	77NAD 02	1191	38	11	ICPES	81MUN 01
3620	40	11	ICPES	82JON 01	1200			OES	75JON 06
3665	82	11	ICPES	81MUN 01	1200			OES	75JON 01
3700			OES	75JON 03	1200			OES	75JON 07
3700	200		ITNA	79REN 03	1200			OES	75JON 02
3794	143	11	ICPES	81MUN 01	1200	20	11	ICPES	82JON 01
3800			OES	75JON 04	1200	30	11	ICPES	82JON 01
3850	80	11	ICPES	82JON 01	1200	70		ICPES	85LYO 01
3900	200		ICPES	85WHI 02	1200	100		ICPES	85WHI 02
3910			CPXRF	84KAU 01	1200	200		ITNA	80SLO 01
4000			OES	75JON 01	1300			OES	75JON 03
4000	100		ITNA	80SLO 01	1330			ITNA	84GLA 11
4400			OES	75JON 02	1400			OES	75JON 08
5100			OES	75JON 03	1500			OES	75JON 11
5100			ITNA	84GLA 11	1500	200		ITNA	77NAD 02
5800			OES	75JON 11	1600			OES	75JON 05
6500			OES	75JON 07	1700			OES	75JON 04
9100			EXRF	81PAR 01	2200	600		CPXRF	80KIR 01
<u>La (ng/g)</u>					<u>Mn (ug/g)</u>				
130	20		RTNA	80SLO 01	174			ICPES	81GOO 01
140	10		ITNA	77NAD 02	430			OES	75JON 09
141	22		RTNA	83TJI 01	448			OES	75JON 01
190	13		ITNA	85GAU 04	567			OES	75JON 06
210	30		ITNA	79REN 03	570			OES	75JON 02
					580			OES	75JON 04
<u>Li (ng/g)</u>					588			OES	75JON 03
340	40	AA		85GAU 04	602	59	11	ICPES	81MUN 01
					610			ICPES	84NAD 01
					652	14	11	ICPES	82JON 01
<u>Lu (ng/g)</u>					652	15	11	ICPES	82JON 01
1.2	0.2		RTNA	83TJI 01	654	20		AA	77GUZ 01
1.3	0.3		RTNA	80SLO 01	655	13	11	ICPES	82JON 01
2.2	0.5		ITNA	85GAU 04	657	7	11	ICPES	82JON 01
					660	28		ITNA	77NAD 02
					668			OES	75JON 05
					668	20		AA	83RAP 01
					669	48		XRF	83PEL 01
					670	6		ICPES	79HER 01
					671	2		ICPES	83SCH 04
					673	10		DCPES	79REE 01

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mn (ug/g) cont.</u>					<u>Na (ug/g) cont.</u>				
673	10	D	DCPES	81REE 01	56			ITNA	84GLA 11
676	0.7		ICPES	84FOG 01	70			OES	75JON 11
677	12		VV	80SCH 05	71			ITNA	84GLA 02
677	12	D	ICPES	80SCH 08	78			OES	75JON 08
678	7		ICPES	81KNA 01	100			OES	75JON 01
685	15		ITNA	80SLO 01	100			OES	75JON 05
686			CPXRF	84KAU 01	105	16	11	ICPES	81MUN 01
686	53		ICPES	85LYO 01	190			OES	75JON 04
688		11	AA	79HOE 02					
690	20		ITNA	85GAU 04					
693	6		ICPES	85WHI 02					
698		11	AA	79HOE 02	128	53		RTNA	83TJI 01
700	100		ITNA	79REN 03	200	100		RTNA	80SLO 01
719	13	11	ICPES	81MUN 01					
727			XRF	80SUZ 02					
738			OES	75JON 08					
885			OES	75JON 07					
2200			EXRF	81PAR 01					
<u>Mo (ug/g)</u>					2.07	0.07	11	ICPES	82JON 01
0.1			RTNA	80SLO 01	2.2	0.1	11	ICPES	82JON 01
0.1	0.1	11	ICPES	82JON 01	2.2	0.2		ITNA	77NAD 02
0.13	0.06	11	ICPES	82JON 01	2.24	0.06	11	ICPES	82JON 01
0.2	0.1	11	ICPES	82JON 01	2.3			ICPES	85JON 01
0.2	0.1	11	ICPES	82JON 01	2.31			ICPES	79HER 01
1.5			OES	75JON 11	2.39	0.09	11	ICPES	82JON 01
1.7			OES	75JON 01	2.4	0.5	11	ICPES	81MUN 01
2.5			OES	75JON 07	2.63			VOLT	81PIH 01
3.6			OES	75JON 03	2.7	1.1		CPXRF	80KIR 01
18.5			OES	75JON 02	2.9	0.1	D	DCPES	79REE 01
<u>N (%)</u>					0.1	0.07	AA	DCPES	81REE 01
1.11	0.01		CB	80SCH 02	3.3	0.2		ICPES	84FOG 01
1.2	0.14		CB	82GLA 02	3.7	0.2		ICPES	84NAD 01
1.3	0.2	35	TCGS	79GLA 04	4			OES	75JON 04
<u>Na (ug/g)</u>					900			CPXRF	80KIR 01
18			OES	75JON 06	1000	300		OES	79EDI 01
18	4	11	ICPES	81MUN 01	1000			ICPES	75JON 09
20			OES	75JON 03	1100			ICPES	81GOO 01
23			ICPES	84NAD 01	1100	50		ICPES	84FOG 01
26			ICPES	81GOO 01	1100	100		CPAA	83MAS 02
26	4		ITNA	77NAD 02	1146	120	11	ICPES	81MUN 01
26	9		ICPES	85WHI 02	1155	41	11	ICPES	81MUN 01
30			OES	75JON 09	1170	40	11	ICPES	82JON 01
37	4		ITNA	85GAU 04	1170	50		ICPES	81OWE 01
40			ITNA	79REN 03	1180	10		ICPES	79HER 01

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>P (ug/g) cont.</u>										
1190	20	11	ICPES	82JON 01						
1190	50	11	ICPES	82JON 01		<	2	L	RTNA	81BYR 01
1200			OES	75JON 05		<	2		RTNA	85BEM 01
1200	100		ICPES	85WHI 02						
1260	20	11	ICPES	82JON 01						
1290			CPXRF	84KAU 01						
1300			OES	75JON 06		<	70	L	RTNA	80SLO 01
1300			OES	75JON 08						
1300	100		ICPES	85LYO 01						
1400			OES	75JON 07						
1400			OES	75JON 11		10.8			CPXRF	84KAU 01
1410	80		FAA	84KUB 01		10.8	0.5		ITNA	85GAU 04
1600			OES	75JON 02		11	0.2		ITNA	77NAD 02
1800			OES	75JON 03		12.22	0.85		ITNA	77GUZ 01
2100			OES	75JON 01		12.5	3.9		ITNA	79REN 03
						13.1	2.6		CPXRF	80KIR 01
						35			EXRF	81PAR 01
<u>Pb (ug/g)</u>										
7.4	1.3		CPXRF	80KIR 01						
8	1		XRF	85AVA 01						
9.6	0.4	11	ICPES	82JON 01						
9.8			FAA	80PRE 01		580	140		CPXRF	79REN 02
9.8	0.3	11	ICPES	82JON 01		1200	250		CB	84GLA 11
10.2	6		FAA	84FUD 01		1220	70		CB	86GAU 01
10.3			CPXRF	84KAU 01		1240		D	CB	85JAC 01
10.4			ASV	82GAJ 01		1240	30	6	CB	84JAC 01
10.4			FAA	82PRE 01		1250	40		CB	86BOW 01
10.5	6		FAA	82KOI 01		1290			CPXRF	84KAU 01
10.5	6		FAA	81HIN 01		1290		D	CB	85JAC 01
10.6	6		FAA	84FUD 01		1290	50	6	CB	84JAC 01
10.6	0.3		AA	83RAP 01		1400	100		ICPES	85WHI 02
10.6	0.3		IDMS	83BRO 01		1490	40		WXRF	86BOW 01
10.7	2		AA	84KAN 01		1500	300		CPXRF	80KIR 01
10.8			FAA	83HOE 01						
10.8			AA	82WIL 04						
10.8	0.6		ICPES	84FOG 01						
10.8	0.6		FAA	80LEG 01		180	10		ITNA	77NAD 02
10.9	0.3		FAA	81KNA 01		180	14		HAA	79VIJ 01
10.93	0.91		ASV	80SZY 01		185	2		RTNA	79HOE 01
11	6		FAA	82KOI 01		185	60		AA	83RAP 01
11	6		FAA	81HIN 01		187	7		HAA	78KUB 02
11	11		FAA	79HOE 02		189	17		ITNA	85GAU 04
11	0.6		FAA	79DAB 02		190	10		RTNA	80SLO 01
11	1		ICPES	79HER 01		198	3		RTNA	80KOS 02
11.1	0.3		AA	80SCH 05		220	10	7	RTNA	77GIL 03
11.1	0.3	D	FAA	80SCH 08		220	10	7	RTNA	80GAL 02
11.2	11		FAA	79HOE 02		220	20	7	RTNA	77GIL 03
11.2			FAA	82HOE 01		220	20	7	RTNA	80GAL 02
11.2	1.1		HAA	82WEI 01		220	20	7	RTNA	80GAL 02
11.9	1.1	11	ICPES	81MUN 01		1140	440		ITNA	79REN 07
13.9	1.2		FAA	82WEI 01						
14.6	3.4	11	ICPES	81MUN 01						
33			EXRF	81PAR 01						

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sc (ng/g)</u>						<u>Th (ng/g)</u>				
27	4		ITNA	77GUZ 01		34	1		ITNA	77NAD 02
38.7	0.6		ITNA	86GAU 01		35	5		RTNA	80SLO 01
39	2		ITNA	84GLA 11		50	12		ITNA	85GAU 04
42	2		ITNA	77NAD 02						
45	6		ITNA	85GAU 04						
53	8		ITNA	79REN 03						
130			RTNA	80SLO 01		13.7			CPXRF	84KAU 01
<u>Se (ng/g)</u>						<u>Tl (ng/g)</u>				
43	1	11	GC	81UCH 02		27		11	ASV	84LIE 01
43	1	11	GC	81UCH 02		28		11	ASV	84LIE 01
44	8		ITNA	77NAD 02		29		11	FAA	84LIE 01
50	10		RTNA	80KNA 01		30		11	ASV	84LIE 01
53	10	9	ITNA	80WAN 01		31		11	ASV	84LIE 01
96	16		RTNA	82POL 01						
<u>Si (ug/g)</u>						<u>U (ng/g)</u>				
248	36		CPXRF	80KIR 01		13	2		RTNA	80SLO 01
1380			CPXRF	84KAU 01		15			DNA	84GLA 02
						15	0.5		RTNA	78DER 01
						18	2		DNA	86GAU 01
						18	6	35	DNA	80GLA 04
						20	4		DNA	85GAU 04
18	1		RTNA	83TJI 01		20	48	R	DNA	81GLA 03
20	2		RTNA	80SLO 01						
21	2		ITNA	85GAU 04						
130	120		ITNA	79REN 03						
<u>Sr (ug/g)</u>						<u>V (ng/g)</u>				
4.45			CPXRF	84KAU 01		99	14	11	RTNA	82HEY 02
4.7	0.2		AF	81HOR 01		248	6	11	RTNA	82HEY 02
4.75	0.1		ICPES	84FOG 01		346	18		RTNA	78BYR 01
4.9	0.1		ICPES	79HER 01		347	27	11	RTNA	82HEY 02
5			OES	75JON 03		370	90	11	ICPES	82JON 01
5.4			IENA	85GAU 04		410	60	11	ICPES	82JON 01
5.5	0.57		CPXRF	80KIR 01		450			ITNA	85GAU 04
10			OES	75JON 04		453	61		ITNA	82HEY 02
20			OES	75JON 01		470	80		ITNA	77NAD 02
<u>Ta (ng/g)</u>						<u>W (ng/g)</u>				
13	4		ITNA	85GAU 04		50	10		RTNA	80SLO 01
1740	270		ITNA	79REN 03						
<u>Tb (ng/g)</u>						<u>Yb (ng/g)</u>				
2	1		RTNA	83TJI 01		9	1		RTNA	83TJI 01
60	10		RTNA	80SLO 01		26	8		ITNA	85GAU 04

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Zn (ug/g)</u>					
5			OES	75JON 09	
51	9		CPXRF	79REN 02	
52	1		ITNA	77NAD 02	
53.5	2		RTNA	80SLO 01	
56			ICPES	84NAD 01	
57			OES	75JON 11	
59.2			CPXRF	84KAU 01	
60	3	11	ICPES	82JON 01	
60.3	1.3		RTNA	77DER 01	
61	4	11	ICPES	82JON 01	
63	3	11	ICPES	82JON 01	
64	4	11	ICPES	82JON 01	
64	7		ICPES	79HER 01	
65			AA	81ARA 01	
65	4	11	ICPES	82JON 01	
65	4.6		XRF	83PEL 01	
65	6		ITNA	79REN 03	
66			OES	75JON 06	
67			XRF	80SUZ 02	
68			OES	75JON 08	
68	5	11	ICPES	82JON 01	
69	8.8		ICPES	85LYO 01	
71	1		DCPES	79REE 01	
71	1	D	DCPES	81REE 01	
71	10	11	ICPES	82JON 01	
72			OES	75JON 02	
72	13		ICPES	85WHI 02	
74			OES	75JON 03	
74	9	11	ICPES	82JON 01	
76	2		ICPES	83SCH 04	
78			ICPES	81GOO 01	
82			OES	75JON 05	
85			OES	75JON 07	
86	21	11	ICPES	81MUN 01	
87			OES	75JON 01	
99	10	D	ICPES	80SCH 08	
99	10		ICPES	80SCH 05	
110	12		CPXRF	80KIR 01	
111	39	11	ICPES	81MUN 01	
141			OES	75JON 04	

TABLE 1577-1: COMPILED DATA FOR NBS SRM 1577 BOVINE LIVER (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS Mean ± SD (n) Method	(n) Method	
			Mean ± SD	n									
A9	ng/g	60	62 ± 13	(15)	65	40 - 100	66 (2)	66 ± 19 (14)	---	---	65 (1)	SMS	
A1	ug/g	---	16 ± 14	(23)	8.2	0.7 - 45.6	---	19 ± 15 (15)	12 ± 12 (5)	1.44 (1)	HPLC	3.6 (1)	
As	ng/g	55 ± 5	55 ± 6	(53)	54	40 - 70	51 ± 5 (13)	55 ± 6 (34)	50 (1)	61.5 (2)	ASV	54 (1)	
As	ng/g	---	---	---	---	---	---	---	---	---	100 (1)	GCMES	
Au	ng/g	---	2.8 ± 3.0	(7)	1.7	0.058 - 7	---	2.8 ± 3.0 (7)	---	---	---	---	
B	ug/g	---	2.9 ± 0.8	(4)	2.34	2.24 - 4	---	4 (1)	3.2 (1)	TGGS	2.29 (2)		
Ba	ug/g	---	0.94 ± 1.1	(7)	0.22	0.12 - 2.92	---	1.3 ± 1.3 (4)	0.68 (2)	0.15 (1)	SSMS	---	
Be	ug/g	17	4	(2)	---	3 - 5	5 (1)	3.0 (1)	---	---	---	---	
Bi	ug/g	---	150	(1)	---	---	---	---	---	150 (1)	AF	---	
Br	ug/g	---	9.1 ± 0.9	(44)	9	7.35 - 11.1	---	9.1 ± 0.9 (30)	---	---	---	---	
C	%	50.6 ± 1.1	(4)	49.87	49.6 - 52	---	---	---	49.74 (2)	CB	51.5 (2)		
Ca	ug/g	124 ± 6	122 ± 14	(57)	123	87 - 151	118 ± 12 (12)	122 ± 14 (14)	126 ± 10 (13)	128 (1)	FAE	117 (2)	
Ca	ug/g	---	---	---	---	---	---	---	---	108 (1)	CPAA	128 (2)	
Cd	ng/g	270 ± 40	281 ± 21	(111)	283	230 - 337	281 ± 21 (55)	284 ± 18 (24)	320 ± 40 (9)	258 ± 30 (10)	ASV	270 (1)	
Cd	ng/g	---	---	---	---	---	---	---	290 ± 30 (3)	AF	253 (1)		
Cd	ng/g	---	---	---	---	---	---	---	300 (1)	VOLT	280 (1)		
Cd	ng/g	---	---	---	---	---	---	---	390 (2)	DCPES	260 (2)		
Ce	ng/g	---	20 ± 4	(5)	21.5	13 - 25	---	22 ± 3 (4)	---	---	---	---	
Cf	ng/g	2.00	2680 ± 140	(31)	2685	2410 - 3000	---	2680 ± 120 (22)	---	2760 ± 330 (4)	---	3000 (1)	
Cg	ng/g	180	230 ± 40	(68)	233	160 - 310	220 ± 39 (9)	229 ± 36 (66)	3 (1)	310 (2)	14HAA	245 (2)	
Co	ng/g	---	---	---	---	---	---	---	---	160 (1)	ASV	225 (1)	
Cr	ng/g	---	---	---	---	---	---	---	---	162 (1)	GC	250 (2)	
Cs	ng/g	88 ± 12	116 ± 52	(49)	123	22 - 280	94 ± 50 (9)	125 ± 50 (30)	62 ± 36 (3)	200 (1)	DCPES	35 (1)	
Cu	ng/g	193 ± 10	17 ± 7	(19)	16	9 - 35	---	16 ± 6 (16)	180 (1)	200 ± 11 (5)	ASV	196 (2)	
Cu	ug/g	---	190 ± 9	(164)	190	161 - 216	192 ± 7 (46)	190 ± 8 (47)	190 ± 9 (21)	187 ± 12 (24)	200 ± 11 (5)	POL	182 (2)
Cu	ug/g	---	---	---	---	---	---	---	197 ± 8 (3)	DCPES	198 (2)		
Dy	ng/g	---	2.9	(2)	---	2.4 - 3.4	---	2.9 (2)	---	197 ± 8 (3)	HPLC	185 (1)	
Er	ng/g	---	0.5	(1)	---	---	0.5 (1)	---	---	---	---	---	
Eu	ng/g	---	0.33 ± 0.06	(5)	0.35	0.235 - 0.400	---	0.33 ± 0.06 (5)	---	---	---	---	
F	ng/g	---	40	(2)	---	40 - 120	---	---	---	80 (2)	ISE	236 (2)	
Fc	ug/g	268 ± 8	265 ± 18	(135)	265	205 - 315	265 ± 17 (28)	267 ± 15 (41)	261 ± 12 (21)	256 (1)	HPLC	265 (1)	
Fe	ug/g	---	---	---	---	---	---	---	275 (2)	SSMS	270 (1)		
Fe	ug/g	---	---	---	---	---	---	---	266 (2)	FAE	266 (2)		
Fe	ug/g	---	---	---	---	---	---	---	280 (2)	CPAA	280 (2)		

TABLE 1577-1: COMPILED DATA FOR MBS SRM 1577 BOVINE LIVER (cont.)

ELE	UNITS	MBS Mean ± SD (n)	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS	
										Mean ± SD (n)	SD (n)
Ca	ng/g	---	4 (1)	---	1.8 - 2.4	---	4 (1)	---	---	---	---
Gd	ng/g	---	2.1 (2)	---	1.8 - 2.4	---	2.1 (2)	---	---	---	---
Ge	ng/g	---	< 400	---	6.8 - 7.12	---	---	---	< 400	---	---
H	%	---	6.97 ± 0.16	(3)	7	6.8 - 7.12	---	4.15 (2)	7.12 (1)	CB	6.9 (2)
Hf	ng/g	---	4.15 (2)	---	1 - 7.3	---	---	---	---	---	TCGS
Hg	ng/g	16 ± 2	16.4 ± 1.6	(43)	16	13.7 - 20	16.3 ± 1.7 (18)	16.2 ± 1.0 (22)	---	---	15 (1)
Ho	ng/g	---	0.25 ± 0.05	(3)	0.25	0.2 - 0.3	0.25 ± 0.05 (3)	0.25 ± 0.05 (3)	---	---	---
I	ng/g	180	234 ± 31	(15)	237	180 - 280	230 ± 30 (14)	---	---	280 (1)	MS
In	ng/g	50	0.07 (2)	---	0.05 - 0.09	---	0.07 (2)	0.98 ± 0.06 (25)	0.99 ± 0.06 (5)	0.99 ± 0.08 (13)	0.97 (1)
K	%	0.97 ± 0.0	0.98 ± 0.06	(62)	0.9695	0.821 - 1.13	0.98 ± 0.02 (8)	0.98 ± 0.06 (25)	0.96 ± 0.06 (5)	0.96 ± 0.08 (13)	0.96 (1)
La	ng/g	---	16 ± 4	(10)	17	10 - 24.5	---	---	---	1.00 (1)	CPAA
Li	ng/g	---	164 (1)	---	164	(1)	---	---	---	0.73 (2)	SSMS
Lu	ng/g	---	0.039 (2)	---	0.039 - 0.039	---	0.039 (2)	---	---	---	---
Mg	ug/g	604 ± 9	608 ± 41	(50)	602	516 - 700	589 ± 17 (15)	630 ± 50 (13)	610 ± 40 (12)	609 (2)	DCPES
Mg	ug/g	---	---	---	---	---	---	---	700 (1)	14AAA	450 (1)
Mn	ug/g	10.3 ± 1.0	10.2 ± 0.7	(134)	10.2	8.4 - 12	10.4 ± 0.6 (42)	10.2 ± 0.5 (39)	10.2 ± 0.6 (20)	9.9 ± 0.7 (15)	11.3 ± 1.0 (3)
Mn	ug/g	---	---	---	---	---	---	---	700 (1)	DCPES	609 (1)
Mn	ug/g	---	---	---	---	---	---	---	9.9 (1)	COLOR	13 (1)
Mo	ug/g	3.4	3.2 ± 0.4	(58)	3.23	2.3 - 4.1	2.8 ± 0.8 (3)	3.3 ± 0.3 (36)	3.0 ± 0.7 (5)	3.3 ± 0.6 (6)	9.45 (2)
Mo	ug/g	---	---	---	---	---	---	---	3.39 (1)	POL	3.15 (2)
Mo	ug/g	---	---	---	---	---	---	---	2.0 (1)	CPAA	2.76 (2)
Mo	ug/g	---	---	---	---	---	---	---	---	---	SSMS
N	%	10.6 ± 0.6	10.5 ± 0.2	(5)	10.42	10.35 - 10.82	---	---	---	3.36 (2)	COLOR
N	%	---	---	---	---	---	---	---	10.42 (1)	CB	10.59 (1)
Na	ug/g	2430 ± 130	2395 ± 200	(57)	2400	1940 - 3010	2440 ± 90 (9)	2390 ± 200 (32)	2550 ± 310 (5)	2000 (1)	GRAV
Na	ug/g	---	---	---	---	---	---	---	10.38 (2)	TCGS	10.82 (1)
Nd	ng/g	---	14 ± 4	(3)	14.5	9 - 18	14 ± 4 (3)	14 ± 4 (3)	14 ± 4 (3)	10.42 (1)	NT
Ni	ng/g	---	160 ± 80	(12)	180	50 - 270	92 ± 56 (3)	190 ± 90 (4)	50 (1)	227 (1)	ASV
Ni	ng/g	---	---	---	---	---	---	---	10.38 (2)	VOLT	195 (1)
P	%	1.1	1.13 ± 0.12	(22)	1.14	0.905 - 1.35	1.07 (2)	1.2 ± 0.2 (3)	1.11 ± 0.10 (12)	1.12 ± 0.21 (6)	GC
Pb	ng/g	340 ± 80	350 ± 50	(69)	350	240 - 490	340 ± 40 (40)	410 ± 80 (5)	360 (2)	1.1 (1)	16AAA
Pb	ng/g	---	---	---	---	---	---	---	500 (1)	OES	280 (2)
Pb	ng/g	---	---	---	---	---	---	---	343 ± 45 (10)	ASV	375 (2)
Pb	ng/g	---	---	---	---	---	---	---	310 (1)	VOLT	440 (2)
Pb	ng/g	---	---	---	---	---	---	---	330.5 (2)	DOPES	330.5 (2)
Pr	ng/g	---	4.2 ± 0.3	(3)	4	4 - 4.6	4.2 ± 0.3 (3)	4.2 ± 0.3 (3)	4.2 ± 0.3 (3)	4.2 ± 0.3 (3)	10MDS
Pt	pg/g	---	70	(1)	---	---	---	---	---	---	---
Rb	ug/g	18.3 ± 1.0	18.4 ± 1.2	(58)	18.7	15.1 - 21.2	20	(2)	18.3 ± 0.8 (35)	16.6 (2)	16NAAA

TABLE 1577-1: COMPILED DATA FOR NBS SRM 1577 BOVINE LIVER (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean ± SD (n)	MAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS	
										SD (n)	Mean (n)
S	ug/g	---	7900 ± 1000 (11)	7440	6300 - 9500	---	---	8020 ± 1110 (3)	8600 ± 900 (4)	6300	(1) NM
S	ug/g	---	---	---	---	---	---	---	---	---	8150 (1) CB
Sb	ng/g	5	9.6 ± 4.7 (21)	10	4 - 26	5 (1)	9.4 ± 4.4 (19)	---	---	---	7200 (2) TCGS
Sc	ng/g	---	0.9 ± 0.3 (8)	1	0.4 - 1.2	---	1.08 ± 0.08 (6)	---	---	---	---
Se	ug/g	1.1 ± 0.1	1.09 ± 0.08 (172)	1.1	0.9 - 1.3	1.08 ± 0.08 (44)	1.10 ± 0.07 (81)	1.02 ± 0.14 (7)	1.12 ± 0.19 (10)	1.11 (2) SSMS	0.98 (1) GC/ES
Se	ug/g	---	---	---	---	---	---	---	1.09 ± 0.10 (9)	1.09 ± 0.10 (9)	1.14 (2) COLOR
Se	ug/g	---	---	---	---	---	---	---	1.17 ± 0.10 (3)	1.17 ± 0.10 (3)	0.98 (1) DC/PES
Se	ug/g	---	---	---	---	---	---	---	1.12 ± 0.02 (6)	1.12 ± 0.02 (6)	1.07 (1) GC-MS
Se	ug/g	---	---	---	---	---	---	---	1.14 ± 0.07 (4)	1.14 ± 0.07 (4)	---
Se(vI)	ug/g	---	0.305 (2)	---	0.3 - 0.31	---	---	---	---	---	0.31 (1) COLOR
Se(vI)	ug/g	---	---	---	---	---	---	---	---	---	0.3 (1) GC
Si	ug/g	17	17.5 ± 1.3 (3)	16.79	16.7 - 19	---	16.7 (2)	---	---	---	119 (1) SSMS
Sm	ng/g	---	1.6 ± 0.3 (7)	1.6	1 - 2	1.6 ± 0.3 (7)	---	---	---	---	---
Sn	ng/g	---	1.8 ± 5 (4)	20	10 - 21	10 (1)	20.3 ± 0.6 (3)	---	---	---	---
Sr	ng/g	140	170 ± 70 (5)	160	100 - 300	160 (1)	150 (1)	230 (2)	---	100 (1) SSMS	---
Ta	ng/g	---	3 (1)	---	---	---	3 (1)	---	---	---	---
Tb	ng/g	---	0.8 ± 1.0 (3)	0.18	0.17 - 2	---	0.8 ± 1.0 (3)	---	---	---	---
Te	ng/g	---	90 (1)	---	---	90 (1)	---	---	---	---	---
Th	ng/g	---	4.9 (2)	---	3 - 6.8	4.9 (2)	---	---	---	---	---
Ti	ug/g	---	2.7 ± 1.5 (6)	2	0.7 - 4.7	0.7 - 4.7	1.7 (1)	1.7 (1)	3.2 (1) 14NAA	2.0 (1) CPAA	
Ti	ug/g	---	---	---	---	---	---	---	4.25 (2) SSMS	0.7 (1) COLOR	
Tl	ng/g	50	2 (1)	---	---	---	---	---	---	2.0 (1) ASV	---
Tm	ng/g	---	0.12 (2)	---	0.1 - 0.15	---	0.12 (2)	---	---	---	---
U	ng/g	0.8	1.0 (2)	---	0.99 - 1.0	---	1.0 (2)	---	---	---	---
V	ng/g	---	58 ± 8 (13)	60	33 - 66.2	55 (1)	61 ± 3 (8)	75 (2)	---	15 (1) COLOR	---
W	ng/g	---	8 ± 5 (5)	5	3.8 - 15	---	9 ± 5 (4)	---	---	---	---
Y	ug/g	---	< 1	---	---	---	---	---	< 1	---	---
Yb	ng/g	---	0.35 ± 0.11 (3)	0.2850	0.28 - 0.48	---	0.35 ± 0.11 (3)	---	---	---	---
Zn	ug/g	130 ± 13	130 ± 7 (188)	130	112 - 150	129 ± 7 (40)	129 ± 6 (67)	132 ± 6 (24)	133 ± 10 (22)	130 (1) OES	132 (1) GC
Zn	ug/g	---	---	---	---	---	---	---	136 ± 6 (4)	136 ± 6 (4)	134 (2) DC/PES
Zn	ug/g	---	---	---	---	---	---	---	129 ± 10 (3)	129 ± 10 (3)	132 (2) AF
Zn	ug/g	---	---	---	---	---	---	---	120 ± 3 (3)	120 ± 3 (3)	136 (1) HPLC
Zn	ug/g	---	---	---	---	---	---	---	134.3 ± 0.6 (3)	134.3 ± 0.6 (3)	14NAA
Zn	ug/g	---	---	---	---	---	---	---	137 ± 10 (3)	137 ± 10 (3)	CPAA
Zr	ug/g	---	2.3 ± 1.8 (4)	1.6	0.09 - 4	---	---	---	4 (1) CPAA	1.6 (1) SSMS	---

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>					<u>Al (ug/g) cont.</u>					
<	130	L	RTNA	76GAU 01		34.4	1.4		RTNA	80WOI 01
5		17	UU	74MAS 01		34.6			ICPES	84NAD 01
40	8		RTNA	79WAR 02		37	6		ITNA	77ZIK 01
49	16		IENA	86CHI 01		42	13		ITNA	77HAM 01
51	11		RTNA	77LIE 01		45.6			ITNA	73NAD 01
51	11		RTNA	75LIE 01		65			ITNA	78CAP 01
53	17		ITNA	86CHI 01						
58	3		ITNA	86GRE 01						
60			ITNA	77OSB 01						
60	1		FAA	75PIC 01		23	12		HAA	82TAM 01
65	5		RTNA	80SLO 01		30	15		IENA	78WAN 01
65	10		SSMS	77PAU 01		40	10		RTNA	75ABU 01
66	21		ITNA	79CHA 04		40	10		RTNA	80SLO 01
68	6		ITNA	78BEH 01		41			HAA	79EVA 01
72	13		AA	80JAC 01		43.3			HAA	77IHN 01
80	6		ITNA	79CHA 02		46	2		RTNA	79HOE 01
91	26		ITNA	73COR 01		47	5		HAA	82SUB 01
100	10		ITNA	84ALK 01		49	6		HAA	76FIO 01
100	30		ITNA	80MIC 01		50			HAA	78WEL 01
194		17	UU	74MAS 01		50			ICPES	84MIA 01
300	100	34	CPXRF	78JOL 01		50	3		ITNA	86GRE 01
400			OES	75BOL 02		50	10		HAA	80AGE 02
2000	600		RTNA	74SCH 03		50	10		HAA	74LOO 01
						52	3	34	HAA	78FLA 01
						52	3		AA	79FLA 02
						52	7		ITNA	79CHA 02
<	3		ITNA	86GRE 01		52.9	1.9	H	RTNA	79ORV 01
<	15	L	ICPES	78CAP 01		53	2	7	RTNA	80GAL 02
<	50		CPXRF	84KAU 01		53	2	7	RTNA	81KUC 01
<	80	L	14NAA	81WIL 01		53	2		RTNA	84SCH 04
<	80	L	14NAA	81WIL 02		54			RTNA	85TIA 01
0.7	0.2		IENA	85GLA 02		54		H	FAE	79FEL 01
1.44	0.1		HPLC	85BON 01		54	2		RTNA	79WAR 02
1.8	0.2		ITNA	77GOO 01		54	2	6	HAA	81KAH 01
2.21	0.15		ITNA	82EHM 01		54	4	7	RTNA	80GAL 02
3.6		11	SSMS	85VOS 01		54	4		RTNA	82BYR 01
5			ICPES	79MCQ 01		54	4		RTNA	78GAL 01
6	2		ICPES	79ABE 01		54	5		RTNA	79MAY 01
6	3		ITNA	84GLA 02		54	5		RTNA	74HEN 01
6.1			ITNA	84GLA 11		55	1		RTNA	80BYR 01
7		17	UU	74MAS 01		55	3	7	RTNA	80GAL 02
8	0.6	11	ICPES	81BLA 02		55	3		RTNA	77GIL 03
8.2	0.8	11	ICPES	81BLA 02		55	3		NAA	77GIL 01
11.3	2.9	6	ITNA	74HOF 01		56	3	6	HAA	81KAH 01
15.3	1.1		ITNA	80SLO 01		56	3		HAA	81UTH 01
20.4	2.9	6	ITNA	74HOF 01		56	4		RTNA	77LIE 01
20.8	0.7		RTNA	77BUO 01		56	4		RTNA	75LIE 01
23.4	0.6		RTNA	79WAR 02		56.6	1.2		RTNA	73DAM 01
23.6	2		ITNA	79CHA 02		56.6	1.2		NAA	74HEY 01
30	65	RD	ITNA	79IMA 03		57			ASV	78DAV 01
30	65	R	ITNA	79IMA 01		58	3		RTNA	79HEI 04

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>As (ng/g) cont.</u>										
58	3		RTNA	79ROS 02		<	3	L	ICPES	82SCH 01
58.5	9		NAA	76GUZ 01		<	60	L	ICPES	78CAP 01
59			RTNA	75STE 02		3	1	6	ICPES	82SCH 01
59	7		RTNA	81KUC 01		5	3		FAA	750WE 01
59	9		AA	83RAP 01		17	4		FLUOR	77WIC 01
60	6		RTNA	83DAN 01						
63	4		RTNA	74ORV 01						
63	5		RTNA	85GAU 04						
64	17	UU		74MAS 01		150			AF	85NAR 02
66		ASV		81LEE 01						
66	23		RTNA	74SCH 03						
69	17	UU		74MAS 01						
70	10		RTNA	83BRA 01		4.3			17	UU
80	30		RTNA	77TJI 01		4.7	0.8		CPXRF	77RIN 01
100			ITNA	77OSB 01		6.1	0.6		CPXRF	77WIL 02
100	10		GCMES	75TAL 01		7.35			17	UU
150			ICPES	80HAA 01		7.4	0.5		EXRF	80DYC 01
200	300	6	CPXRF	77WIL 03		7.7	0.5	5	ITNA	80HOE 01
280	100	34	CPXRF	78JOL 01		7.8	0.1	5	IENA	79GLA 02
290	110		ICPES	80HAA 01		8.0	0.1	5	IENA	79GLA 02
500			FAA	78CAP 01		8.0	0.5		RTNA	76GAU 01
600	500	6	CPXRF	77WIL 03		8	1		RTNA	77TJI 01
						8.22	0.4		RTNA	79WAR 02
<u>Au (ng/g)</u>										
<	0.5	L	RTNA	80SLO 01		8.23	0.45		IENA	86CHI 01
0.058	0.013		RTNA	82ZEI 01		8.4	0.6		ITNA	84GLA 02
0.083	0.021		RTNA	84TJI 01		8.5			IENA	84GLA 11
0.23	0.16		RTNA	77TJI 01		8.5	9.9	R	ITNA	79IMA 01
1.7	0.4		RTNA	77KUS 01		8.56			ITNA	79IMA 03
4.9	0.8		RTNA	74SCH 03		8.6	0.4		CPXRF	84KAU 01
6	1		ITNA	79CHA 02		8.8	0.3		ITNA	78GAN 01
7	0.8		RTNA	79WAR 02		8.8	0.3	5	ITNA	84GLA 11
29.2	2.1		RTNA	77NAD 01		8.8	0.4		ITNA	80HOE 01
						8.8	1.4		EXRF	79GIA 01
<u>B (ug/g)</u>										
2.24	6	AE+AF		74DAU 01		8.9	2.1		ITNA	77HAM 01
2.34	6	AE+AF		74DAU 01		9			IENA	85GAU 04
3.2	0.2		TCGS	79FAI 01		9.0	0.6		ITNA	77JUR 02
4	1		ICPES	79ABE 01		9.0	0.6		ITNA	78BEH 01
						9.0	0.9		ITNA	86GRE 01
						9	1		CPXRF	78VIS 01
<u>Ba (ug/g)</u>										
<	20	L	14NAA	81WIL 02		9.3			IENA	79KUC 01
<	30	L	ITNA	78CAP 01		9.3	0.8		ITNA	80MAE 01
0.12	0.13		RTNA	76GAU 01		9.3	3		CPXRF	79REN 02
0.13			ICPES	78DAH 01		9.34	0.82		ITNA	74DON 01
0.15	11		SSMS	85VOS 01		9.37			ITNA	73NAD 01
0.22	0.02		RTNA	79WAR 02		9.4	0.4		XRF	77SMY 01
1.24			ICPES	84NAD 01		9.5			ITNA	80CRE 01
1.8	0.39		RTNA	77GUI 03		9.5	1	6	CPXRF	77WIL 03
2.92			ITNA	73NAD 01		9.6	0.7		CPXRF	85CLA 01
						9.7	1		IENA	79KUC 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Br (ug/g)</u>					<u>Ca (ug/g) cont.</u>				
9.7	0.5		CPXRF	84BIS 01	119	2	1	AA	77UCH 02
9.8			ITNA	79KUC 01	120		11	SSMS	85VOS 01
9.8	0.3		RTNA	80WOI 01	120	2	11	ICPES	82JON 01
10	0.7		CPXRF	82ROE 02	121	3	11	ICPES	82JON 01
10	1		CPXRF	80MAE 01	122			ICPES	80HAA 01
10.4			ITNA	82AKA 01	122	7		ICPES	79MCQ 01
11			ITNA	78CAP 01	123	5		FAA	84HAR 02
11	1	5	ITNA	80TOU 01	123	17		AA	79MCQ 01
11	2.3		CPXRF	80KIR 01	124	10		ITNA	79CHA 02
11.1	1.6		RTNA	74SCH 03	124.67	8.48		NAA	76GUZ 01
12	4		ITNA	77ZIK 01	125	8		ITNA	75PIE 01
13.4		17	UU	74MAS 01	125	13		RTNA	79WAR 02
22	10		ITNA	77ZIK 01	127	5		AA	75MIN 01
					127	7		AA	80UCH 01
<u>C (%)</u>					127	12		ICPES	79MCQ 02
					128	2		FAE	83MAR 04
49.6	1.5	35	CB	79GLA 04	129	12	12	FAA	85CAR 02
49.87	0.07		CB	80SCH 02	130	10		ITNA	77ZIK 01
51	2	35	TCGS	79GLA 04	130	12		ITNA	84ALK 01
52	2		TCGS	79FAI 01	130	30		ITNA	84GLA 02
					131			RTNA	75STE 02
<u>Ca (ug/g)</u>					131	5		WXRF	84ALK 01
					131	8		CPXRF	78VIS 01
30			AE+AF	79ULL 01	131	9		CPXRF	80KIR 01
68	6		AA	82HAR 01	133			ICPES	84NAD 01
71	23		EXRF	77NIE 01	134	18		ICPES	79ABE 01
80	30		ITNA	74WES 01	134	21	12	FAA	85CAR 02
87	13		ICPES	85WHI 02	135		11	SSMS	85VOS 01
90	13		CPXRF	80MAE 01	135			ICPES	78DAH 01
94	112		AA	79MAN 01	137.5	18		PAA	76KAT 04
100			CPXRF	77WIL 02	140			ICPES	78CAP 01
100	20		RTNA	76GAU 01	140	7		CPXRF	84BIS 01
100	26		ITNA	78FUR 01	143	19		CPXRF	85CLA 01
101			AA	79LOC 01	143	42		ICPES	84BLA 01
103	12		CPXRF	79MAN 01	150			ITNA	84GLA 11
104		17	UU	74MAS 01	151	7.4		CPXRF	81ROB 02
106	3.2		AA	74WES 01	158	15		EXRF	80DYC 01
107			ITNA	82AKA 01	210			CPXRF	84KAU 01
107	232	RD	ITNA	79IMA 03	309			ITNA	78CAP 01
107	232	R	ITNA	79IMA 01					
108	9		CPAA	77ZIK 01	<u>Cd (ng/g)</u>				
110	1		ICPES	85WOL 01					
110	30		ITNA	86GRE 01	200		11	SSMS	85VOS 01
114	2	1	ICPES	78SUD 01	210	20	11	ASV	84ADE 03
115	12		RTNA	80CAN 01	210	42		ASV	79STO 01
116	2		AA	80IID 01	230		11	FAA	75BLO 01
116	2	1	AA	77UCH 02	240		17	UU	74MAS 01
116	3.4	6	DCPES	83FRA 01	240	10		FAA	82SUZ 01
118	4.9	6	DCPES	83FRA 01	246	56		NAA	76GUZ 01
118	9	1	ICPES	78SUD 01	250		11	FAA	75BLO 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Cd (ng/g) cont.</u>					<u>Cd (ng/g) cont.</u>				
250			AA	78EVA 01	280	70		AA	83RAP 01
250			FAA	83ATS 01	280	70		CPAA	85CAN 01
250	10	11	ASV	84ADE 03	283			RTNA	75HAL 01
250	20	11	ASV	84ADE 03	283		17	UU	74MAS 01
250	20		RTNA	83BRA 01	283	50		FAA	79STO 01
250	20		AF	75EPS 01	288	26		FAA	81ZAU 01
250	25		AA	82EVA 01	288	29		RTNA	80GRE 01
250	30		VV	79CHA 02	288	35		RTNA	75LIE 01
253	24		AE+AF	74RAI 02	288	35		RTNA	77LIE 01
253	24		FAA	82ATS 01	290		17	UU	74MAS 01
260		11	ASV	81DAN 01	290		17	UU	74MAS 01
260			FAA	82AKA 01	290		14	FAA	80CHA 08
260			FAA	75SLA 01	290		14	FAA	80CHA 08
260	10		RTNA	74ORV 01	290		11	ASV	81DAN 01
260	10		FAA	84RAB 01	290			FAA	80JAR 01
260	20		FAA	84ROS 01	290	10		FAA	80LEG 01
260	20	11	ASV	84ADE 03	290	10		AA	84HUD 01
260	20		AA	74ULL 01	290	10	D	AA	84HUD 03
260	20		FAA	79DAB 02	290	10		RTNA	77BAJ 02
260	30		RTNA	74SCH 03	290	13	7	AA	73TAL 01
260	30		FAA	78PIE 01	290	20		NAA	76DER 01
260	30		RTNA	80SLO 01	290	20		AA	79FLA 02
266	20		FAA	74RAI 02	290	30		RTNA	74HEN 01
266	27		RTNA	79MAY 01	290	30		RTNA	79DER 01
269	13		RTNA	74RCO 01	290	30		FAA	79WAR 01
270			AA	77FRI 01	290	30		FAA	84GLA 02
270		17	UU	74MAS 01	290	30		ICPES	84BLA 01
270		17	UU	74MAS 01	293	9		ITNA	86GRE 01
270		17	UU	74MAS 01	300			ASV	82GAJ 01
270	2		FAA	83STE 05	300			ICPES	80HAA 01
270	10		ICPES	83SCH 04	300	18	7	AA	73TAL 01
270	10	11	AA	81BLA 03	300	18		FAA	74TAL 01
270	20	11	ASV	84ADE 03	300	20		RTNA	78GAL 01
270	20		AA	85ADE 02	300	20		RTNA	77TJI 01
270	20		AA	79WAR 01	300	20	7	RTNA	80GAL 02
270	20		AA	75EPS 01	300	20		VOLT	84OST 01
270	30		AA	79LAK 01	300	23		AF	75WOR 01
270	50		FAA	81KNA 01	300	25		FAA	74TAL 01
270	60		TCGS	79FAI 01	300	25	7	AA	73TAL 01
270	80		FAA	74GRO 01	300	30		RTNA	76GAU 01
275	5		FAA	78HUD 01	300	40	7	RTNA	81KUC 01
280			ASV	74COP 01	300	50		AA	75HIN 01
280			FAA	82HOE 01	300	70		AA	80AGE 01
280			AA	84KAN 01	300	700		AA	76LAN 01
280			RTNA	85TIA 01	300	800	6	FAA	76LAN 01
280	20		SSMS	77PAU 01	310			RTNA	75STE 02
280	30		AA	80SCH 05	310		7	RTNA	81KUC 01
280	30	D	FAA	80SCH 08	310		11	FAA	81DAN 01
280	50	11	AA	81BLA 03	310			ICPES	85NAR 02
280	50		ICPES	84MIA 01	310			AF	85NAR 02

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cd (ng/g) cont.</u>						<u>Cl (ug/g) cont.</u>				
310	20		FAA	78GRO 01		2700	300		ITNA	84GLA 11
310	40		ICPES	82AZI 01		2715	151		ITNA	84ALK 01
310	50		FAA	80POL 01		2740			CPXRF	84KAU 01
320			FAA	83ATS 01		2750			ITNA	73NAD 01
320		11	FAA	81DAN 01		2750	110		ITNA	78FUR 01
320	40	11	AA	81BLA 03		2760			ITNA	82AKA 01
320	130	6	FAA	76LAN 01		2770	40		ITNA	86GRE 01
337	58		RTNA	79PLA 01		2793	294.4		NAA	76GUZ 01
350	50	11	ICPES	82JON 01		2800	150		IENA	84GLA 11
360	28		ICPES	82EVA 01		2830	200		NAA	78GAN 01
380	20	6	DCPES	83FRA 01		2900			ITNA	80CRE 01
390	70	11	ICPES	82JON 01		3000	100		TCGS	79FAI 01
400	40	6	DCPES	83FRA 01		3000	190		ITNA	77HAM 01
550	450		AA	79MON 01		3200	800		CPXRF	79REN 02
560	130	34	CPXRF	78JOL 01		3500	200		14NAA	81WIL 02
						11663		17	UU	74MAS 01
<u>Ce (ng/g)</u>						<u>Co (ng/g)</u>				
13		17	UU	74MAS 01		120		17	UU	74MAS 01
18	4		RTNA	80SLO 01		160	10		ASV	85ADE 01
21.5			RTNA	77LAU 02		162			GC	85MEY 02
22			RTNA	82LAU 01		170			ITNA	73NAD 01
25	3		RTNA	83TJI 01		170	10		NAA	78GAN 01
46	14		RTNA	76GAU 01		170	20		ITNA	79CHA 02
74	28		RTNA	86TSU 01		174		17	UU	74MAS 01
						178		14	FAA	80CHA 08
<u>Cl (ug/g)</u>						178	5		RTNA	79WAR 02
1880		17	UU	74MAS 01		180	10		RTNA	77GIL 03
2155	170	34	CPXRF	78JOL 01		180	10		NAA	77GIL 01
2410	600		EXRF	77NIE 01		180	30		ITNA	79WAR 01
2460		35	ITNA	81GLA 04		182		14	FAA	80CHA 08
2480		17	UU	74MAS 01		188	27		NAA	76GUZ 01
2500	130	35	ITNA	81GLA 03		190		1	IENA	79KUC 01
2530			ITNA	78CAP 01		190	20	6	ITNA	74BEC 01
2542	300		ITNA	77ZIK 01		190	20		AA	84KAN 01
2550	100		ITNA	74WES 01		200		11	SSMS	85VOS 01
2570	3110	R	ITNA	79IMA 01		200	16		FAA	74WES 01
2570	3110	RD	ITNA	79IMA 03		200	40		ITNA	80LAK 01
2590		17	UU	74MAS 01		203			RTNA	75STE 02
2610		17	UU	74MAS 01		210			ITNA	79KUC 01
2610	200		ITNA	79CHA 02		210	10		ITNA	86CHI 01
2615	192		RTNA	74SCH 03		210	20		ITNA	74WES 01
2632	67		ITNA	77GUI 02		210	30		AA	79FLA 02
2632	67		NAA	76MIL 02		210	40		FAA	79WAR 01
2650	100		ITNA	80SLO 01		217	13		ITNA	81KRI 01
2680	80		RTNA	79WAR 02		220			RTNA	75ABU 01
2685	165		PAA	76KAT 04		223	11		RTNA	75LIE 01
2690	170		EXRF	80DYC 01		223	11		RTNA	77LIE 01
2700	70		ITNA	84GLA 02		225		17	UU	74MAS 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Co (ng/g) cont.</u>						<u>Cr (ng/g)</u>				
225	7		COLOR	82KIR 01		22	10		ICPES	81BLA 01
230	20		RTNA	80SLO 01		35	3		GC	81BLA 01
230	20	6	ITNA	74BEC 01		35	4	11	FAA	80KUM 01
230	100		ITNA	77ZIK 01		44.9	5	11	RTNA	76PIE 01
233	5		RTNA	79DER 01		51		17	UU	74MAS 01
236	9		ITNA	80MIC 01		53	9		FAA	74WOL 01
240			CHEML	79MIL 01		60	12		AA	80JAC 01
240			ITNA	80CRE 01		60	30		RTNA	74SCH 03
240	10		ITNA	73COR 01		61	3	11	FAA	80KUM 01
240	10		ITNA	84ALK 01		72	8	11	ICPES	81BLA 02
240	14		IENA	75MAZ 01		72	13		ITNA	86GRE 01
240	20		RTNA	74HEN 01		74	5		RTNA	77LIE 01
240	30		ITNA	78BEH 01		78.9		11	NAA	79VER 01
240	37		ITNA	77HAM 01		80.6		11	NAA	79VER 01
245		7	RTNA	81KUC 01		85	9		RTNA	78GAL 01
246	14		RTNA	77TJI 01		85	9	7	RTNA	80GAL 02
247	31		ITNA	81MOL 01		88		7	RTNA	81KUC 01
248	25		ITNA	79ZEI 01		88	8	11	FAA	80KUM 01
250			ITNA	82AKA 01		92	9	11	ICPES	81BLA 02
250	30		CHEML	81MAR 01		92	10	7	RTNA	81KUC 01
252	8		ITNA	86GRE 01		94	8	7	FAA	80CHA 01
257	2		ITNA	74LIN 01		94.8	19.5	11	RTNA	76PIE 01
260		17	UU	74MAS 01		96	8		RTNA	79TJI 01
260	7	7	RTNA	81KUC 01		98	5		RTNA	75LIE 01
260	10		ITNA	79SAT 01		115	42		RTNA	79PLA 01
260	21		RTNA	76GAU 01		120	40		AA	79FLA 02
265			AA	79ABU 01		120	70		ITNA	788EH 01
269	30		AA	80JAC 01		123	6		RTNA	77LIE 01
275			FAA	82HOE 01		130		17	UU	74MAS 01
280			NAA	79MIL 01		130			ITNA	80CRE 01
290			ITNA	78CAP 01		130	30		RTNA	78GOE 01
300			ICPES	80HAA 01		130	50		RTNA	77TJI 01
300			ITNA	77OSB 01		133	12		ITNA	80MIC 01
300		11	SSMS	85VOS 01		140		17	UU	74MAS 01
300	70		IENA	86CHI 01		144	23	7	FAA	80CHA 01
310	60		RTNA	74SCH 03		150		17	UU	74MAS 01
310	120		14NAA	81WIL 02		150	10		NAA	78GAN 01
310	120		14NAA	81WIL 01		150	30		ITNA	74DON 01
340		17	UU	74MAS 01		160	5	11	RTNA	78MCC 01
360	60		ITNA	78FUR 01		160	60		RTNA	76GAU 01
370	60		RTNA	77MEL 01		163	10		RTNA	74MCC 01
390		17	UU	74MAS 01		180	100		CPXRF	78VIS 01
400			FAA	75SLA 01		190	10		FAA	79WAR 01
410	120		RTNA	77KUS 01		200	20		DCPES	79REE 01
						200	20	D	DCPES	81REE 01
						210	2	11	RTNA	78MCC 01
						210	30		ITNA	78MCC 01
						210	31		ITNA	74MCC 01
						210	40		ITNA	79WAR 01
						210	70		RTNA	79WAR 02
						280	200		ITNA	79SAT 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cr (ng/g) cont.</u>						<u>Cu (ug/g)</u>				
400	500	11	ICPES	82JON 01		87		11	SSMS	85VOS 01
400	500	11	ICPES	82JON 01		93	12	6	ITNA	74HOF 01
490		17	UU	74MAS 01		124		11	XRF	83PEL 01
500	3500	R	ITNA	73NAD 01		138	18.8		FAA	74GRO 01
540		17	UU	74MAS 01		146	40		ITNA	77ZIK 01
600			ITNA	79KUC 01		148	19		FAA	77FUJ 01
870	60		CHEML	74LI 01		151	191	RD	ITNA	79IMA 03
1000	400		FAE	83MAR 04		151	191	R	ITNA	79IMA 01
1000	600	11	RTNA	76STE 01		153			CPXRF	78UEM 01
1160	600		ITNA	76STE 01		154	7		ICPES	85FAS 01
1300		17	UU	74MAS 01		154	43		CPAA	77ZIK 01
1400	800	11	RTNA	76STE 01		161	12		RTNA	77KUS 01
1570		17	UU	74MAS 01		167		17	UU	74MAS 01
1600		11	SSMS	85VOS 01		167			XRF	80SUZ 02
1600	800	11	RTNA	76STE 01		168	8	1	ICPES	78SUD 01
1700	900	11	RTNA	76STE 01		169	7	12	FAA	85CAR 02
1900	1000	11	RTNA	76STE 01		170	8		RTNA	80SLO 01
2000		11	SSMS	85VOS 01		173		17	UU	74MAS 01
2400	700		CPXRF	77WIL 02		173.5	13.9	34	CPXRF	78JOL 01
2700			FAA	83ATS 01		173.6	18.5		RTNA	83DAN 01
						174	2		EXRF	80DYC 01
<u>Cs (ng/g)</u>						175		17	UU	74MAS 01
						176	9	6	ITNA	74HOF 01
9	4		ITNA	86GRE 01		177	1		AA	79MCQ 01
10	2		ITNA	80MIC 01		177	7		RTNA	77TJI 01
11.5	1		ITNA	81KRI 01		177	19	5	ITNA	80TOU 01
12			ITNA	81MOL 01		179	19		ICPES	84BLA 01
13	1		ITNA	77JUR 02		180		17	UU	74MAS 01
13	1		ITNA	78BEH 01		180	3		AA	73TAL 01
14	2		RTNA	75LIE 01		180	8	11	ICPES	81BLA 02
14.9	2.2		RTNA	77LIE 01		180	15		CPXRF	84BIS 01
15		17	UU	74MAS 01		181		11	SSMS	85VOS 01
15	2		RTNA	79WAR 02		181		17	UU	74MAS 01
16	3		ITNA	79SAT 01		181		124	ITNA	82KIM 01
16	4		RTNA	76GAU 01		182	6	1	ICPES	78SUD 01
18	9		ITNA	73COR 01		182	8	7	RTNA	81KUC 01
19.2		17	UU	74MAS 01		182	13		CPXRF	81SAI 01
20	5		ITNA	86CHI 01		183			ICPES	84NAD 01
23	8		IENA	86CHI 01		183	2	7	RTNA	84FAR 02
24			ITNA	80CRE 01		183	8	35	RTNA	77GLA 01
30	6		ITNA	84ALK 01		183	8		PAA	76WIL 01
35			ITNA	73NAD 01		183	19		CPXRF	79MAN 01
40		11	SSMS	85VOS 01		184	5		SSMS	77PAU 01
44		17	UU	74MAS 01		184	6	12	FAA	85CAR 02
130	30		RTNA	77MEL 01		185			FAA	78CAP 01
180	10	7	RTNA	80GAL 02		185	3.3	6	DCPES	83FRA 01
						185	6.8	11	RTNA	74WES 01
						185	7		RTNA	78GAL 01
						185	7	7	RTNA	80GAL 02
						185	8		FAE	83MAR 04

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g) cont.</u>										<u>Cu (ug/g) cont.</u>
185	9	11	ICPES	82JON 01		191		11	FAA	81DAN 01
185	14		AA	83RAP 01		191		11	XRF	83PEL 01
186			ITNA	84GLA 11		191	6.2	11	RTNA	74WES 01
186	2		ICPES	79MCQ 02		191	9		CPXRF	85CLA 01
186	5.2	D	AA	84HUD 03		191	10.5		NAA	76GUZ 01
186	5.2		AA	84HUD 01		191	34		XRF	77SMI 04
186	5.5	11	FAA	74WES 01		192	4		EXRF	79GIA 01
186	5.5	6	CPXRF	77WIL 03		192	4		FAA	81CLE 02
186	16		EXRF	77NIE 01		192	6		ITNA	86GRE 01
187			CPXRF	84KAU 01		192	8		ICPES	80SCH 08
187		7	RTNA	81KUC 01		192	9	6	FAA	76LAN 01
187	2	2	FAA	84MIL 01		192	26		ICPES	84ZER 01
187	2.3		AA	80AGE 01		193		11	FAA	81DAN 01
187	4	11	ICPES	81BLA 02		193	1		ICPES	85WOL 01
187	6		ITNA	78FUR 01		193	10		FAA	80LON 01
187	8		RTNA	75LIE 01		193	14		RTNA	77GIL 03
187	8		RTNA	77LIE 01		193	14		NAA	77GIL 01
187	13		ITNA	74DON 01		193	14	7	RTNA	80GAL 02
187.4	15.5		AA	79MON 01		194		17	UU	74MAS 01
188		11	XRF	83PEL 01		194		17	UU	74MAS 01
188	1		ICPES	79MCQ 01		194			FAA	75SLA 01
188	3		RTNA	74HEN 01		194	1		AA	75ABU 01
188	6		AA	79FLA 02		194	3		ASV	85ADE 01
188	6		HPLC	85SAI 01		194	4		AA	82HAR 01
188	9		AA	75HIN 01		194	6		ICPES	82EVA 01
188	9.8	11	FAA	74WES 01		194	13	6	CPXRF	77WIL 03
188	10		RTNA	79WAR 02		194	31		AA	79LAK 01
188	10		ITNA	79WAR 01		195		6	POL	72SIN 01
189			ITNA	82AKA 01		195			AE+AF	79ULL 01
189		11	XRF	83PEL 01		195	3		AA	79WAR 01
189	2	1	AA	77UCH 02		195	4		AA	80UCH 01
189	2	1	AA	77UCH 02		195	5		RTNA	76GAU 01
189	2		AA	80IID 01		195	10		ICPES	81KNA 01
189	3.4	6	DCPES	83FRA 01		196			ASV	83HOL 01
189	4	11	ICPES	82JON 01		196		14	FAA	80CHA 08
189	4		CPXRF	81ROB 02		196			RTNA	85TIA 01
189	6		FAA	81CLE 01		196	6	6	FAA	76LAN 01
189	7		ICPES	78JAC 01		196	8		CPXRF	77WIL 02
189	12		CPXRF	80KIR 01		196	9		FAA	75SME 01
189	20		EXRF	84KNA 01		196	9		AA	81KRI 01
190		11	AA	81MOH 01		196	14.7		RTNA	79PLA 01
190	1		RTNA	80WOI 01		196	28		RTNA	82KIM 01
190	2		FAA	84HAR 02		197			NAA	78GAN 01
190	3		FAA	79WAR 01		197	4		ITNA	79SAT 01
190	8		VV	80SCH 05		197	11	2	FAA	84MIL 01
190	10		ICPES	79ABE 01		197	13	6	POL	72SIN 01
190	14		ITNA	84ALK 01		197	16		CPXRF	80MAE 01
190	15		ASV	81DOG 01		198			AA	80EVA 01
190	24		ITNA	77HAM 01		198	7		AA	82EVA 01
191		6	NAA	72SIN 01		198	9		ITNA	79CHA 02
191		14	FAA	80CHA 08		199	6		ITNA	80MAE 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g) cont.</u>										
199	12		ITNA	84GLA 02		40	20		ISE	83KNA 01
200		11	AA	81MOH 01		120			ISE	84GLA 02
200	2		RTNA	79DER 01						
200	4		ICPES	83SCH 04						
200	7		FAA	84ROS 01						
201			ICPES	78DAH 01		110	5		AA	75HIN 01
201	1	7	RTNA	84FAR 02		132		17	UU	74MAS 01
201	4	13	HPLC	85BON 01		137		5	14NAA	81WIL 01
201.7	7.9		RTNA	77BUO 01		149		11	XRF	83PEL 01
202	4	13	HPLC	85BON 01		150		11	XRF	83PEL 01
204			ICPES	80HAA 01		155	49	11	AA	78GOR 01
204	9		CPXRF	78VIS 01		186	37		AA	79MAN 01
204	9		AA	84CUB 01		187	80	12	FAE	83MAR 04
205		6	AA	72SIN 01		205			CPXRF	78UEM 01
206	5		RTNA	74RAV 01		209	28	11	ICPES	82JON 01
207		11	ASV	81DAN 01		220	16		RTNA	77MEL 01
208	11		AA	76LAN 01		226		17	UU	74MAS 01
208	27		RTNA	74SCH 03		229		17	UU	74MAS 01
210			ICPES	78CAP 01		230	37		FAA	77FUJ 01
210	12.5		FAA	75PIC 01		234	6		FAA	84HAR 02
213		17	UU	74MAS 01		236	5		RTNA	75LIE 01
216		11	ASV	81DAN 01		236	5		RTNA	77LIE 01
216	22	32	CPXRF	77CRO 01		239			ICPES	84NAD 01
225	21		ICPES	82AZI 02		240		11	XRF	83PEL 01
241	45		CPAA	78MCG 01		240		17	UU	74MAS 01
241	54	32	CPXRF	77CRO 01		240	7		EXRF	80DYC 01
241	65		CPXRF	76ZEI 01		240	12		RTNA	77TJI 01
270	90		14NAA	81WIL 02		241	8	1	ICPES	78SUD 01
277	14		AA	79MAT 02		242		17	UU	74MAS 01
394	3		AA	81UCH 01		243	14		FAA	81CLE 02
						244	2		ICPES	79MCQ 02
						244	6		ICPES	79MCQ 01
						244	10		AA	79MCQ 01
2.4	0.8		RTNA	76GAU 01		247.3			AA	79LOC 01
3.4	0.1		RTNA	86TSU 01		248	16		CPXRF	80MAE 01
						249			RTNA	75STE 02
<u>Er (ng/g)</u>										
<	0.5	L	RTNA	82LAU 01		250	12		CPXRF	78VIS 01
<	0.5	L	RTNA	76GAU 01		250	22		ITNA	77HAM 01
0.5			RTNA	77LAU 02		252			ITNA	79KUC 01
						252	25		ICPES	81BLA 01
						253			FAA	78CAP 01
						254			ICPES	78CAP 01
<u>Eu (ng/g)</u>										
0.235	0.024		RTNA	76GAU 01		254	7	2	FAA	84MIL 01
0.3	0.04		RTNA	86TSU 01		255	8		ITNA	79SAT 01
0.35			RTNA	82LAU 01		255	15		ITNA	79ZEI 01
0.35			RTNA	77LAU 02		255	30		ITNA	78FUR 01
0.4	0.1		RTNA	83TJI 01		256			OES	75BOL 02
3			ITNA	78CAP 01		256	3		AA	80IID 01
140			ITNA	80CRE 01		256	3	1	AA	77UCH 02
310			ITNA	73NAD 01		257			CPXRF	79MAN 01
									ITNA	78CAP 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Fe (ug/g) cont.</u>						<u>Fe (ug/g) cont.</u>				
257		11	XRF	83PEL 01		270	47		ITNA	74DON 01
257		14	FAA	80CHA 08		271	6		ITNA	80MIC 01
257	30	32	CPXRF	77CRO 01		271	27		ITNA	81MOL 01
258		7	RTNA	81KUC 01		271.5	11.5	34	CPXRF	78JOL 01
258	10	11	ICPES	82JON 01		272	3		AA	82TIN 01
259	12	11	ICPES	81BLA 02		272	9.5	11	AA	74WES 01
260			CPXRF	84KAU 01		272	15	7	RTNA	81KUC 01
260.9	12.89		NAA	76GUZ 01		272	27		RTNA	76GAU 01
261	8		ITNA	86GRE 01		272	71		XRF	77SMI 04
261	15		ICPES	85FAS 01		273	5		ITNA	80MAE 01
262			ITNA	73NAD 01		273	8.5	6	CPXRF	77WIL 03
262	7		ICPES	78JAC 01		273	9		FAA	81CHA 01
262	7.7	6	DCPES	83FRA 01		273	10		AA	84CUB 01
262	10		FAA	81CLE 01		274	5		AA	80UCH 01
262	13		ICPES	79ABE 01		274.5	28		PAA	76KAT 04
262	18		CPXRF	81SAI 01		275	4	13	HPLC	85BON 01
263	12		ITNA	84ALK 01		275	6	13	HPLC	85BON 01
263	12		CPXRF	81ROB 02		275	12		AA	83RAP 01
264	3	11	ICPES	82JON 01		276			FAA	75SLA 01
264	4	2	FAA	84MIL 01		276	2	1	AA	77UCH 02
264	6	11	ICPES	82JON 01		277	2		ITNA	74LIN 01
264	29		ITNA	78BEH 01		277.9	16.7	6	ITNA	74BEC 01
264	44		ITNA	86CHI 01		278			AA	80EVA 01
265	5		GC	81BLA 01		278	14		CPAA	77ZIK 01
265	11		RTNA	79WAR 02		279	20		RTNA	77GIL 03
265	16		ITNA	74WES 01		280			AA	82WIL 04
265	19		ITNA	81KRI 01		280		11	SSMS	85VOS 01
265	25		NAA	78GAN 01		280	30		ITNA	77ZIK 01
265	30		ITNA	79CHA 02		281	2		ICPES	85WOL 01
266	5	11	ICPES	81BLA 02		282			ICPES	80HAA 01
266	9	D	ICPES	80SCH 08		282	26		ICPES	84ZER 01
266	9		ICPES	80SCH 05		283	60		CPAA	78MCG 01
266	10	11	AA	74WES 01		283	68		CPXRF	76ZEI 01
266	10	11	AA	78GOR 01		285		17	UU	74MAS 01
267		14	FAA	80CHA 08		287	17		CPXRF	77WIL 02
267	5		EXRF	79GIA 01		287	81		IENA	86CHI 01
268	8		FAA	80LON 01		289	52	32	CPXRF	77CRO 01
268	24		EXRF	77NIE 01		290			ITNA	80CRE 01
268	25	1	ICPES	78SUD 01		293		17	UU	74MAS 01
268	38		VV	79LAK 01		293	8		RTNA	80SLO 01
269	9		CPXRF	85CLA 01		293	8		ITNA	79DAS 01
269	10		ICPES	81KNA 01		293	21	6	CPXRF	77WIL 03
269	12		ITNA	80LAK 01		300	31	12	FAA	85CAR 02
270			ICPES	78DAH 01		305	33		ICPES	84BLA 01
270		11	SSMS	85VOS 01		310	28		RTNA	74SCH 03
270	4.2	6	DCPES	83FRA 01		310	33	12	FAA	85CAR 02
270	12		ITNA	73COR 01		315			ITNA	77OSB 01
270	12		COLOR	78GOR 01		331		17	UU	74MAS 01
270	18		CPXRF	84BIS 01		334	10		14NAA	81WIL 02
270	20	7	RTNA	80GAL 02		343	19		AA	82HAR 01
270	20		NAA	77GIL 01		345	7	12	FAE	83MAR 04

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Fe (ug/g) cont.</u>						<u>Hg (ng/g) cont.</u>				
350	64		RTNA	77KUS 01		16	1.2	FAA	72ROO 01	
364		17	UU	74MAS 01		16	1.6	RTNA	79MAY 01	
1395			AE+AF	79ULL 01		16	2	FAA	77GLA 03	
1433		17	UU	74MAS 01		16	2	RTNA	77TJI 01	
						16	2	AA	79FLA 02	
<u>Ga (ng/g)</u>						16	3	CVAA	80TON 01	
<	240	L	IENA	78WAN 01		16	3	7	RTNA	81KUC 01
<	500	L	EXRF	79GIA 01		16.1	0.4	ITNA	86GRE 01	
<	20000	L	14NAA	81WIL 02		16.2	0.08	RTNA	84DRA 01	
4			RTNA	74HEN 01		16.2	3	14	FAA	74CHU 03
1100	700		CPXRF	77WIL 02		16.4	0.4	RTNA	74HEN 01	
						16.4	4.3	NAA	76GUZ 01	
<u>Gd (ng/g)</u>						16.5	0.8	CVAA	72RAI 01	
<	1.4	L	RTNA	76GAU 01		16.8	1.8	5	RTNA	80GRE 01
1.8			RTNA	82LAU 01		17	2	RTNA	79WAR 02	
2.4			RTNA	77LAU 02		17	2	CVAA	82SUL 01	
						17	4	2	CVAA	79KNE 01
<u>Ge (ng/g)</u>						17.3	2.8	5	RTNA	80GRE 01
<	400	L	EXRF	79GIA 01		17.4	2	RTNA	82GRI 01	
						18	2	RTNA	79CHA 02	
						18	3	RTNA	75LIT 01	
<u>H (%)</u>						18	40	R*	AA	83YAN 01
						20		UU		74FEL 01
6.8	0.3		TCGS	79FAI 01		20		17	UU	74MAS 01
7	0.1	35	TCGS	79GLA 04		20	2	CVAA	77AND 01	
7.12	0.1		CB	80SCH 02		20	5	CVAA	84BAR 02	
						22	1	RTNA	75LIE 01	
<u>Hf (ng/g)</u>						22.1	6.3	14	FAA	74CHU 03
						22.3	1.3	RTNA	77LIE 01	
1			RTNA	80SLO 01		30	10	FAA	78EGA 01	
7.3			ITNA	80CRE 01		41		17	UU	74MAS 01
						47	4	RTNA	77MEL 01	
<u>Hg (ng/g)</u>						200	21	ITNA	75LIT 01	
13.7	1.4	14	FAA	74CHU 01		<u>Ho (ng/g)</u>				
14	2		FAA	79STO 01		<	0.94	L	RTNA	76GAU 01
14	2		CVAA	78MAT 01		0.2			RTNA	82LAU 01
14.5	1.7		RTNA	72RAI 01		0.25			RTNA	77LAU 02
14.5	3.4		RTNA	72ROO 01		0.3	0.1		RTNA	86TSU 01
14.5	3.4		RTNA	72ROO 02						
14.7			RTNA	75STE 02						
15	2		MPOES	81TAN 01						
15	4		RTNA	74SCH 03						
15.8	5.1	14	FAA	74CHU 03						
16		7	RTNA	81KUC 01						
16			CVAA	79TAG 01						
16			CVAA	82GLA 02						
16	0.3		RTNA	83GRE 02						
16	1		RTNA	74BYR 03						

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>I (ng/g)</u>					<u>K (%) cont.</u>					
180	12		RTNA	77ROO 01		0.95	0.05		CPXRF	80KIR 01
190			ITNA	84GLA 11		0.96			ITNA	79KUC 01
200	10		RTNA	79WAR 02		0.96			ITNA	73NAD 01
210	60		IENA	84FAR 01		0.96	0.06		AA	74WES 01
220	30		ITNA	79CHA 02		0.961			CPXRF	84KAU 01
221.8	14.8		RTNA	80GVA 01		0.964			CPXRF	76ZEI 01
230	40		IENA	84GLA 11		0.964	0.0244		ITNA	84ALK 01
237			IENA	85GAU 04		0.9645	0.0045		CPAA	78MCG 01
246	11	35	RTNA	81ALL 01		0.969	0.022		FE	80UCH 01
249	12	34	RTNA	81ALL 01		0.969	0.09		ITNA	79CHA 02
249	12		RTNA	81STR 01		0.969	0.091		PAA	76KAT 04
251	16		RTNA	83ALL 01		0.9695	0.0785		ITNA	74DON 01
270	30		IENA	82SAT 01		0.97	0.05 11		ICPES	82JON 01
280			NAA	79HEC 01		0.979	0.024 12		FAA	85CAR 02
280	10		MS	85SCH 01		0.979	0.028		WXRF	84ALK 01
						0.98		17	UU	74MAS 01
<u>In (ng/g)</u>						0.98	0.008		FAA	84HAR 02
<	1000	L	RTNA	76GAU 01		0.98	0.026		ITNA	86GRE 01
0.05			RTNA	74RAV 01		0.9875		17	UU	82EHM 01
0.09	0.01		RTNA	78KOB 01		0.99	0.02		ITNA	74MAS 01
						0.99	0.02	11	ICPES	80MIC 01
<u>K (%)</u>						0.99	0.03		CPXRF	84BIS 01
						0.992	0.022		AA	75HIN 01
0.5	0.07		CPXRF	80MAE 01		0.9984	0.0648		NAA	76GUZ 01
0.63	0.11		14NAA	81WIL 01		1.00			ITNA	77OSB 01
0.6674	0.0662		RTNA	74SCH 03		1.00	0.01 2		FAA	84MIL 01
0.7			CPXRF	78UEM 01		1.00	0.03		TCGS	79FAI 01
0.7	11	SSMS	85VOS 01			1.006		1	AA	78SZY 01
0.725	0.789 RD	ITNA	79IMA 03			1.01	0.18		ITNA	77HAM 01
0.725	0.7898 R	ITNA	79IMA 01			1.015		1	AA	78SZY 01
0.742		ITNA	78CAP 01			1.02	0.01		RTNA	80WOI 01
0.7537	17	UU	74MAS 01			1.02	0.012		ITNA	78FUR 01
0.76	11	SSMS	85VOS 01			1.02	0.03		AA	82HAR 01
0.821	17	UU	74MAS 01			1.021	0.048 34		CPXRF	78JOL 01
0.84	0.13 32	CPXRF	77CRO 01			1.0323	0.0258		RTNA	77LIE 01
0.85	0.02	CPXRF	85CLA 01			1.0323	0.0258		RTNA	75LIE 01
0.87	0.13	ITNA	84GLA 02			1.04	0.03		ITNA	74WES 01
0.875		ITNA	80CRE 01			1.05	0.01		ICPES	85WOL 01
0.904	17	UU	74MAS 01			1.05	0.02		ICPES	85WHI 02
0.91		ICPES	84NAD 01			1.06		35	ITNA	81GLA 04
0.91	0.08	RTNA	79WAR 02			1.06	0.08		NAA	78GAN 01
0.92	1	IENA	79KUC 01			1.087	0.124		CPXRF	79MAN 01
0.92	0.01 2	FAA	84MIL 01			1.12	0.02		ITNA	80SLO 01
0.92	0.028	CPXRF	81ROB 02			1.13	0.04		EXRF	80DYC 01
0.93	0.05	CPXRF	77WIL 02			1.15	0.06		ICPES	84BLA 01
0.93	0.11	EXRF	77NIE 01			1.18	0.1		14NAA	81WIL 02
0.935		ITNA	82AKA 01			1.2	0.22		FAE	83MAR 04
0.94	0.05	ITNA	80MAE 01							
0.948	17	UU	74MAS 01							
0.948	17	UU	74MAS 01							

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>La (ng/g)</u>						<u>Mg (ug/g) cont.</u>				
10	1		RTNA	74HEN 01		597	10		AA	75HIN 01
12	9		RTNA	74SCH 03		598	14		ITNA	75PIE 01
14	5		RTNA	80SLO 01		598	50		ITNA	77ZIK 01
17			RTNA	75LIE 01		600	9	1	AA	77UCH 02
17			RTNA	82LAU 01		601	5		ICPES	85WOL 01
17			RTNA	77LAU 02		601	6	6	AA	76HOW 01
17	2		RTNA	83TJI 01		602	11		AA	80UCH 01
17.3	0.4		RTNA	77LIE 01		604.6	26.84		NAA	76GUZ 01
20			ITNA	73NAD 01		605	32		AA	74WES 01
24.5	1.2		RTNA	76GAU 01		608	6		RTNA	79WAR 02
31	1		RTNA	86TSU 01		608	6		ITNA	79WAR 01
62	5		ITNA	79CHA 02		609			AE+AF	79ULL 01
70			ITNA	78CAP 01		610	15		FAA	79WAR 01
72			ITNA	80CRE 01		613			ICPES	78CAP 01
						616	19		ICPES	85WHI 02
<u>Li (ng/g)</u>						618	10		RTNA	80WOI 01
						620	20		ITNA	79CHA 02
164	26		AA	85EVA 01		629	6.7	6	DCPES	83FRA 01
						629	12.3	6	DCPES	83FRA 01
<u>Lu (ng/g)</u>						636			ICPES	78DAH 01
						638	34		WXRF	84ALK 01
<	0.02		RTNA	83TJI 01		650	60		ITNA	86GRE 01
<	0.1	L	RTNA	76GAU 01		657	9	11	ICPES	82JON 01
0.039			RTNA	77LAU 02		658	48		ICPES	84BLA 01
0.039			RTNA	82LAU 01		659	82		ITNA	74WES 01
						660	20	11	ICPES	82JON 01
<u>Mg (ug/g)</u>						668	42		AA	79LAK 01
						674		17	UU	74MAS 01
290	40		14NAA	81WIL 01		684	110		ITNA	78FUR 01
332	541	R	ITNA	79IMA 01		700	20		14NAA	81WIL 02
332	541	RD	ITNA	79IMA 03		700	130		ITNA	77HAM 01
450		11	SSMS	85VOS 01		712	98	1	ICPES	78SUD 01
516		17	UU	74MAS 01		720			ITNA	84GLA 11
517		17	UU	74MAS 01		949			ITNA	78CAP 01
555	12	2	FAA	84MIL 01		1040			ITNA	73NAD 01
555	21	1	ICPES	78SUD 01						
558	11		ITNA	84ALK 01		<u>Mn (ug/g)</u>				
566			FAA	78CAP 01						
566	10		AA	79MCQ 01		5.3	0.72	6	ITNA	74HOF 01
567			AA	79LOC 01		7.7			FAA	83ATS 01
573	4		ICPES	79MCQ 02		8	1		CPXRF	80MAE 01
573	17		ICPES	79MCQ 01		8.4	2.1		CPXRF	80KIR 01
580	20		CPXRF	80KIR 01		8.5	2.6		ICPES	82AZI 02
588			ICPES	84NAD 01		8.73			FAA	77SHE 02
590	40		ICPES	79ABE 01		9.00	0.37		FAA	74GRO 01
593	10		AA	80IID 01		9.0	0.7		VV	80SCH 05
593	10	1	AA	77UCH 02		9.0	0.7	D	ICPES	80SCH 08
593	49		AA	82HAR 01		9.0	2.2	6	CPXRF	77WIL 03
594	13	2	FAA	84MIL 01		9.12		17	UU	74MAS 01
595	6	6	AA	76HOW 01		9.14			ITNA	73NAD 01
596.5	13.5		PAA	76KAT 04		9.2		11	SSMS	85VOS 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Mn (ug/g) cont.</u>						<u>Mn (ug/g) cont.</u>				
9.2	0.7		AA	79FLA 02		10.1	1.1		ITNA	79SAT 01
9.2	0.9	11	ICPES	81BLA 02		10.1	1.2		CPXRF	81ROB 02
9.2	1.1	12	FAA	85CAR 02		10.1	3.6		EXRF	77NIE 01
9.2	1.8	6	CPXRF	77WIL 03		10.15	2.15		PAA	76KAT 04
9.26	0.85		RTNA	79PLA 01		10.17	0.69		NAA	76GUZ 01
9.3			ITNA	82AKA 01		10.2		17	UU	74MAS 01
9.3	0.5		CPXRF	84BIS 01		10.2		17	UU	74MAS 01
9.4	0.1	7	RTNA	84FAR 02		10.2			ASV	80CHR 01
9.4	0.3		RTNA	83DAN 01		10.2	0.1		AA	80IID 01
9.4	1.1		EXRF	79GIA 01		10.2	0.2		AA	75HIN 01
9.42		17	UU	74MAS 01		10.2	0.4		ICPES	82EVA 01
9.44	1.16		FAA	84HAR 02		10.2	0.45	11	RTNA	74WES 01
9.5		17	UU	74MAS 01		10.2	1	1	AA	77UCH 02
9.5	0.5		ITNA	82KIM 01		10.23	0.43		RTNA	74RAV 01
9.5	0.7	11	ICPES	81BLA 02		10.3	0.2		ITNA	82EHM 01
9.5	1.4		CPXRF	77WIL 02		10.3	0.2		ICPES	85WOL 01
9.6	0.4		RTNA	74HEN 01		10.3	0.2		AA	85KOJ 01
9.6	0.5		RTNA	77KUS 01		10.3	0.3		FAA	82CLE 01
9.6	0.6	11	FAA	74WES 01		10.3	0.3		FAA	81CLE 02
9.7			ICPES	78CAP 01		10.3	0.36	11	FAA	74WES 01
9.7		11	SSMS	85VOS 01		10.3	0.77		ITNA	77HAM 01
9.7	0.3		CPXRF	85CLA 01		10.3	0.8		RTNA	76GAU 01
9.7	0.3	1	ICPES	78SUD 01		10.3	1		FAA	80LON 01
9.7	0.8	11	ICPES	82JON 01		10.4			FAA	78CAP 01
9.71	1.36		ICPES	82AZI 01		10.4			AA	82CLE 01
9.77	0.79		ITNA	74DON 01		10.4	0.2		FAA	82CLE 01
9.8	1.1		FAA	82GRO 01		10.4	0.23		FAA	75PIC 01
9.9			ICPES	78DAH 01		10.4	0.3	1	AA	77UCH 02
9.9		17	UU	74MAS 01		10.4	0.4		RTNA	77BUO 01
9.9	0.3		COLOR	84HIR 02		10.4	0.4	11	ICPES	82JON 01
9.9	0.47		ITNA	74WES 01		10.4	0.6	11	FAA	75SME 01
9.9	0.9		ICPES	85WHI 02		10.4	1.1		RTNA	74SCH 03
9.95	0.22		ITNA	86GRE 01		10.5		11	KRF	83PEL 01
10		35	ITNA	81GLA 04		10.5	0.1	7	RTNA	84FAR 02
10			FAA	75SLA 01		10.5	0.1	7	RTNA	84FAR 02
10		11	AA	81MOH 01		10.5	0.2		RTNA	80HOI 01
10.0	0.5		NAA	78GAN 01		10.5	0.3	11	ICPES	82JON 01
10.0	0.6	6	ITNA	74HOF 01		10.5	0.6		AA	83RAP 01
10.0	0.7		ITNA	79WAR 01		10.5	0.6		ITNA	84GLA 02
10.0	0.7		RTNA	79WAR 02		10.5	1.1		ITNA	79CHA 02
10	1		ICPES	79MCQ 01		10.5	16	6	FAA	76LAN 01
10	1		ICPES	79MCQ 02		10.6	0.11	6	DCPES	83FRA 01
10.0	1.3		ICPES	79ABE 01		10.6	0.19	D	AA	84HUD 03
10	2		EXRF	80DYC 01		10.6	0.19		AA	84HUD 01
10	5		AA	76LAN 01		10.6	0.2		ICPES	83SCH 04
10.1			CPXRF	84KAU 01		10.6	0.7		FAA	81CLE 01
10.1			ITNA	84GLA 11		10.6	1.1		ITNA	78FUR 01
10.1	0.1		AA	82CLE 01		10.7	0.3		ITNA	80MAE 01
10.1	0.2		ITNA	80SLO 01		10.8	0.15	6	DCPES	83FRA 01
10.1	0.5	11	RTNA	74WES 01		10.8	0.2	2	FAA	84MIL 01
10.1	0.6	2	FAA	84MIL 01		10.8	0.3		RTNA	82KIM 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Mn (ug/g) cont.</u>						<u>Mo (ug/g) cont.</u>				
10.8	0.8		FAA	79WAR 01		2.97		17	UU	74MAS 01
10.8	20	6	FAA	76LAN 01		3			ITNA	73NAD 01
10.9	1.2		CPXRF	79MAN 01		3.0	0.2		RTNA	83DAN 01
10.9	1.5	34	CPXRF	78JOL 01		3.0	0.3		RTNA	77GIL 03
10.9	2		XRF	77SMI 04		3.0	0.3	7	RTNA	80GAL 02
11			AA	80EVA 01		3.04	0.18		IENA	75MAZ 01
11		17	UU	74MAS 01		3.06	0.7	34	CPXRF	78JOL 01
11		11	AA	81MOH 01		3.1			FAA	79BEN 01
11			ICPES	84NAD 01		3.1		1	IENA	79KUC 01
11.0	0.4		FAA	81CHA 01		3.1	0.03		RTNA	80KUL 01
11.0	0.4		AA	82EVA 01		3.1	0.5	11	ICPES	82JON 01
11.0	0.7		ICPES	84ZER 01		3.12	0.26		RTNA	78NAD 01
11.1	1.6		AA	82HAR 01		3.19	0.14		RTNA	77LIE 01
11.1	2.1		ICPES	85FAS 01		3.19	0.14		RTNA	75LIE 01
11.2	0.5		RTNA	77LIE 01		3.2			ITNA	79KUC 01
11.2	0.5		RTNA	75LIE 01		3.2	0.1		RTNA	77DIK 01
11.2	0.7		FAA	84ROS 01		3.2	0.11		ITNA	86GRE 01
11.2	1.4	1	ICPES	78SUD 01		3.23	0.09		SSMS	77PAU 01
11.4	0.8	11	FAA	75SME 01		3.3	0.2		RTNA	79WAR 02
11.4	3.7	12	FAA	85CAR 02		3.3	0.3	11	RTNA	74WES 01
11.5		17	UU	74MAS 01		3.31	0.09		COLOR	85EVA 02
11.5			ITNA	78CAP 01		3.33			RTNA	75STE 02
11.5	13.7	RD	ITNA	79IMA 03		3.39	0.24		POL	84NAG 01
11.5	13.7	R	ITNA	79IMA 01		3.4		1	IENA	79KUC 01
11.7	0.7		FAA	79WES 01		3.4	0.1	11	ICPES	82JON 01
12	2.6		ITNA	84ALK 01		3.4	0.15		FAA	74WES 01
12.5	2		DCPES	79REE 01		3.4	0.2		RTNA	80SLO 01
12.5	2	D	DCPES	81REE 01		3.4	0.2	7	RTNA	81KUC 01
13			AE+AF	79ULL 01		3.4	0.36		RTNA	82BYR 01
13	3		ITNA	77ZIK 01		3.4	0.7	5	ITNA	80TOU 01
13	6		TCGS	79FAI 01		3.42	0.11		RTNA	80VER 01
14	1		AA	79MCQ 01		3.42	0.11	11	RTNA	81COR 01
14.2	1.8		FAA	77FUJ 01		3.42	0.2		COLOR	83MAT 02
19			XRF	80SUZ 02		3.5			RTNA	84BYR 01
19	9		CPXRF	78VIS 01		3.5	0.2	11	RTNA	74WES 01
						3.5	0.6		CPXRF	77RIN 01
<u>Mo (ug/g)</u>						3.5	1.5		CPXRF	77WIL 02
						3.6			RTNA	85TIA 01
1.81	0.07		FAA	84GOH 01		3.6	0.14	11	RTNA	81COR 01
2			ICPES	79MCQ 02		3.6	0.7		RTNA	74SCH 03
2	1		CPAA	77ZIK 01		3.6	0.9		CPXRF	80MAE 01
2.2	0.9		CPXRF	80KIR 01		3.7	0.4		14NAA	81WIL 02
2.3		11	SSMS	85VOS 01		3.71	0.25		RTNA	77TJI 01
2.5		17	UU	74MAS 01		3.78	0.356		NAA	76GUZ 01
2.5	0.1		ITNA	78FUR 01		3.8			ICPES	80HAA 01
2.6	0.4		14NAA	81WIL 01		3.8		7	RTNA	81KUC 01
2.8		17	UU	74MAS 01		3.9	0.42		RTNA	84MOK 02
2.8			ICPES	84MIA 01		4.1	0.4		CPXRF	78VIS 01
2.89	0.45		IENA	86CHI 01		4.3	1.2		ITNA	79ZEI 01
2.91	0.14		ITNA	80MIC 01		4.9		17	UU	74MAS 01
2.95	0.27		RTNA	76GAU 01		5.8	0.3		AA	79FLA 02

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>N (%)</u>						<u>Na (ug/g) cont.</u>				
10.35	0.3		TCGS	79FAI 01		2438			ITNA	78CAP 01
10.4	0.8	35	TCGS	79GLA 04		2440	160		RTNA	79WAR 02
10.42	0.11		CB	80SCH 02		2454	135		ITNA	84ALK 01
10.59	0.04		GRAV	74CAR 01		2455		1	AA	78SZY 01
10.59	0.04	D	GRAV	74CAR 05		2462	502	12	FAA	85CAR 02
10.81	0.24	D	NT	74CAR 05		2490	260	2	FAA	84MIL 01
10.82	0.24		NT	74CAR 01		2500			ITNA	80MIC 01
						2530	120		NAA	78GAN 01
<u>Na (ug/g)</u>						2540		1	AA	78SZY 01
						2550		35	ITNA	81GLA 04
1019		17	UU	74MAS 01		2550	190		ITNA	78BEH 01
1152	119	6	ITNA	74HOF 01		2570		1	IENA	79KUC 01
1600	100		14NAA	81WIL 01		2570		17	UU	74MAS 01
1940	30		ITNA	80SLO 01		2570	870	2	FAA	84MIL 01
1980	60		ITNA	78FUR 01		2609	142		NAA	76GUZ 01
2000	150		14NAA	81WIL 02		2632	29		RTNA	75LIE 01
2000	500		CPXRF	80KIR 01		2632	29		RTNA	77LIE 01
2040			ITNA	80CRE 01		2720	190		ICPES	85WHI 02
2176	77	6	ITNA	74HOF 01		2730			ITNA	84GLA 11
2220		17	UU	74MAS 01		2768	156		RTNA	74SCH 03
2227	200		ITNA	77ZIK 01		3010	230		ICPES	84BLA 01
2230	210		ITNA	77HAM 01		3100			ITNA	77OSB 01
2250		17	UU	74MAS 01		3100	600		TCGS	79FAI 01
2250			ITNA	84GLA 02						
2260	370		ITNA	77JUR 02		<u>Nd (ng/g)</u>				
2280		1	IENA	79KUC 01						
2280	300		ITNA	82SCH 05		9			RTNA	82LAU 01
2300			ICPES	84NAD 01		14.5			RTNA	77LAU 02
2300	2850	RD	ITNA	79IMA 03		18	4		RTNA	83TJI 01
2300	2850	R	ITNA	79IMA 01		170	40		RTNA	76GAU 01
2310			ITNA	79KUC 01						
2320	40		AA	75HIN 01		<u>Ni (ng/g)</u>				
2320	300		ICPES	79ABE 01						
2330	60		ITNA	74WES 01		<	60	L	ICPES	82JON 01
2340		17	UU	74MAS 01		<	60		AA	82EVA 01
2340	250		AA	82HAR 01		<	60	L	ICPES	82JON 01
2346	300	12	FAA	85CAR 02		<	120		ITNA	80MIC 01
2355			ITNA	82AKA 01		<	500		ITNA	75PIE 01
2360	30		ITNA	86GRE 01		<	500		ICPES	79ABE 01
2370		17	UU	74MAS 01		<	500	L	NAA	76GUZ 01
2370	40		PAA	76KAT 04		<	500	L	EXRF	77NIE 01
2390	20		ICPES	85WOL 01		<	590		CPXRF	84KAU 01
2400		35	ITNA	81GLA 03		<	700	L	RTNA	76GAU 01
2400			ITNA	73NAD 01		<	720	L	RTNA	81KUC 01
2400	200		AA	74WES 01		<	800	L	EXRF	79GIA 01
2400	350		FAE	83MAR 04		<	1000		RTNA	77MEL 01
2410	10		RTNA	74HEN 01		<	9000	L	14NAA	81WIL 01
2420	50		FE	80UCH 01		50			AA	78EVA 01
2425		17	UU	74MAS 01		50	50		ICPES	82EVA 01
2426	130		ITNA	74DON 01		62	18		IENA	75MAZ 01
2430	150		ITNA	79CHA 02		70	30		AA	79FLA 02

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ni (ng/g) cont.</u>										
155	19		FAA	80DOR 01		200		11	SSMS	85VOS 01
180	20		PAA	79CHA 02		240	80		FAA	77FUJ 01
195			GC	85MEY 02		250			AA	78EVA 01
200	10		ASV	85ADE 01		250	40		AA	82EVA 01
200	30		RTNA	79WAR 02		262		17	UU	74MAS 01
210			ITNA	73NAD 01		270	20	11	ASV	84ADE 03
227			VOLT	81PIH 01		280	40		AA	80AGE 01
270	120	7	RTNA	77TJI 01		290	20	11	ASV	84ADE 03
470			RTNA	81KUC 01		300			FAA	79YAS 01
520	150		IENA	86CHI 01		300	20	11	ASV	84ADE 03
600	400		CPXRF	78VIS 01		300	40		FAA	78GRO 01
700	500		CPXRF	77WIL 02		300	100		CPXRF	78VIS 01
1000	500		RTNA	80SLO 01		300	300	11	ICPES	82JON 01
1000	690		AA	79MON 01		310	20		VOLT	840ST 01
1200	100		EXRF	80DYC 01		320		14	FAA	80CHA 08
1300	200		CPXRF	79REN 02		320	13		FAA	75PIC 01
						320	30	11	ASV	84ADE 03
<u>P (%)</u>										
						320	60		FAA	79WAR 01
						328	16	11	IDMS	74CHO 02
0.31	0.1		CPXRF	79REN 02		330			AA	77FRI 01
0.64	0.06		14NAA	81WIL 01		330	9		FAA	83STE 05
0.816	0.64		EXRF	77NIE 01		330	10		FAA	80POL 01
0.905			NAA	78GAN 01		330	10		FAA	79DAB 02
0.93			ICPES	84NAD 01		330	20		AA	83RAP 01
0.98			ICPES	78CAP 01		330	700		AA	76LAN 01
0.9891	0.0465 1		ICPES	78SUD 01		333	67	11	IDMS	74CHO 02
1.0009	0.026 1		ICPES	78SUD 01		340		11	FAA	81DAN 01
1.04	0.06 6		FAA	81LAN 01		340	20		AA	79FLA 02
1.1	0.006		COLOR	79MCQ 01		340	20		AA	85ADE 02
1.1	0.02 6		FAA	81LAN 01		340	20	11	ASV	84ADE 03
1.1	0.15		14NAA	81WIL 02		340	40		FAA	76HAD 01
1.13	0.03		ICPES	79MCQ 01		343	23		FAA	76KOI 01
1.14			CPXRF	84KAU 01		343	23		AA	76ZAN 02
1.152	0.004		ICPES	84PRI 01		350			AA	84KAN 01
1.16	0.01		ICPES	85WOL 01		350	15		FAA	81CHA 01
1.16	0.03		ICPES	79ABE 01		350	20		FAA	82ATS 02
1.18	0.03 11		ICPES	82JON 01		350	22	6	FAA	76LAN 01
1.18	0.05		ICPES	84BLA 01		350	40		AA	79WAR 01
1.2056	0.065		WXRF	84ALK 01		350	50		FAA	75BEH 01
1.21	0.01 11		ICPES	82JON 01		350	50	D	FAA	80SCH 08
1.235	0.241		IENA	84ALK 01		350	50		FAA	81KNA 01
1.24	0.02		ICPES	85WHI 02		350	50		AA	80SCH 05
1.3	0.1		CPXRF	80KIR 01		360		11	FAA	81DAN 01
1.3498	0.029		NAA	76GUZ 01		360	12	6	FAA	76LAN 01
						360	25	6	POL	72SIN 01
						360	30		FAA	79STO 01
						360	30		SSMS	77PAU 01
						370			AA	82WIL 04
						370			ASV	82GAJ 01
						380			FAA	83ATS 01
						380			ICPES	80HAA 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Pb (ng/g) cont.</u>						<u>Rb (ug/g) cont.</u>				
380			FAA	82HOE 01		16.7	3.2		CPXRF	81ROB 02
380		14	FAA	80CHA 08		16.8		1	IENA	79KUC 01
380			FAA	82VAN 01		16.8	1.9	6	CPXRF	77WIL 03
380			ASV	74COP 01		16.9			ITNA	79KUC 01
380	76		ASV	79STO 01		17	0.7		ITNA	80MIC 01
390		6	POL	72SIN 01		17	1		EXRF	80DYC 01
390		11	ASV	81DAN 01		17	3		ITNA	77ZIK 01
390		11	ASV	81DAN 01		17.4	1.8		NAA	78GAN 01
390	40		FAA	84ROS 01		17.72	1.8		ITNA	81MOL 01
400	30	6	DCPES	83FRA 01		17.8			ITNA	78CAP 01
400	50		PAA	79CHA 02		17.97	0.42		ITNA	86CHI 01
400	100		PAA	74LUT 01		17.97	0.6		RTNA	75LIE 01
400	300	11	ICPES	82JON 01		17.97	0.6		RTNA	77LIE 01
420	140	34	CPXRF	78JOL 01		18			ITNA	77OSB 01
430	130		ICPES	82EVA 01		18	0.3		RTNA	79WAR 02
450	30		FAA	80LEG 01		18	0.8		ITNA	79SAT 01
460	130		FAA	74GRO 01		18	1		CPXRF	77WIL 02
480	50	6	DCPES	83FRA 01		18.1	0.6		14NAA	81WIL 01
490		6	FAA	82KOI 01		18.4	0.4		EXRF	79GIA 01
490		6	FAA	81HIN 01		18.4	0.7		ITNA	86GRE 01
500			OES	75BOL 02		18.4	2		ITNA	81KRI 01
500		6	FAA	82KOI 01		18.5	0.4		ITNA	74LIN 01
500		6	FAA	81HIN 01		18.62	0.95		NAA	76GUZ 01
520		17	UU	74MAS 01		18.64	0.58		IENA	86CHI 01
530			ICPES	85NAR 02		18.7		17	UU	74MAS 01
3900	1000		CPXRF	77WIL 02		18.7	0.2		ITNA	80LAK 01
5000			14NAA	81WIL 01		18.7	0.5		ITNA	78FUR 01
43000	4000		FAA	79WES 01		18.7	0.9	5	ITNA	80TOU 01
						18.7	1		ITNA	73COR 01
<u>Pr (ng/g)</u>						18.7	1.5		ITNA	79CHA 02
						18.7	3.6		EXRF	77NIE 01
<	3	L	RTNA	82LAU 01		18.8	0.85		ITNA	84ALK 01
4			RTNA	77LAU 02		18.8	1.3		RTNA	76GAU 01
4		2	RTNA	86TSU 01		18.8	1.4		ITNA	79LAK 01
4.6	0.3		RTNA	76GAU 01		18.8	1.9		CPXRF	84BIS 01
						18.9	0.8		FAA	83GRO 02
<u>Pt (pg/g)</u>						18.95	1.65		PAA	76KAT 04
						19			ITNA	80CRE 01
<	3000		RTNA	84TJI 01		19	1		RTNA	77MEL 01
70	33		RTNA	82ZEI 01		19	1.6		ITNA	78BEH 01
						19	1.6		ITNA	77JUR 02
<u>Rb (ug/g)</u>						19	2.5		ITNA	77HAM 01
						19.1	0.8		CPXRF	85CLA 01
9.9	1.6		CPXRF	80MAE 01		19.2	1.4		ITNA	80MAE 01
13.2		11	SSMS	85VOS 01		19.3	2.8		CPXRF	79MAN 01
15	2		14NAA	81WIL 02		19.5	2.1		ITNA	79ZEI 01
15	2.5	34	CPXRF	78JOL 01		19.8	1.4	6	ITNA	74BEC 01
15.1	4.4		XRF	77SMI 04		19.9		17	UU	74MAS 01
16.5	1.2	5	ITNA	80TOU 01		20		11	SSMS	85VOS 01
16.6	2.8		RTNA	74SCH 03		20	2.4		CPXRF	80KIR 01
16.7			CPXRF	84KAU 01		20	3		CPXRF	78VIS 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Rb (ug/g) cont.</u>						<u>Sb (ng/g) cont.</u>				
20.1			ITNA	73NAD 01		50			ITNA	79KUC 01
20.9	2.5	6	CPXRF	77WIL 03		55	9	6	ITNA	74BEC 01
21.2	0.55		AA	85EVA 01		69	24	6	ITNA	74BEC 01
23.3		17	UU	74MAS 01		70		1	IENA	79KUC 01
23.4		17	UU	74MAS 01		130	170	RD	ITNA	79IMA 03
28			CPXRF	76ZEI 01		130	170	R	ITNA	79IMA 01
28		17	UU	74MAS 01		300	200		ICPES	83OLI 01
29	4		CPAA	78MCG 01						
<u>S (ug/g)</u>						<u>Sc (ng/g)</u>				
3300	1000		CPXRF	79REN 02		<	0.5	L	RTNA	75LIE 01
6300	2100		NM	83LI 01		<	1	L	RTNA	80SLO 01
7200	200		TCGS	79FAI 01		<	1		RTNA	75STE 02
7200	400		TCGS	77JUR 01		<	1	L	NAA	78GAN 01
7353	81		ICPES	84PRI 01		<	4	L	ITNA	78CAP 01
7410	110		ICPES	84MOR 01		<	800	L	14NAA	81WIL 02
7440			CPXRF	84KAU 01		0.4		17	UU	74MAS 01
8150	80		CB	86BOW 01		0.6	0.1		RTNA	74HEN 01
8550	150		WXRF	86BOW 01		1			ITNA	73NAD 01
8800	273		WXRF	84ALK 01		1	0.9		RTNA	76GAU 01
9300	100		ICPES	85WHI 02		1.1			ITNA	84GLA 11
9500	700		CPXRF	80KIR 01		1.1	0.1		RTNA	79WAR 02
16200	2000		ITNA	79CHA 02		1.1	0.3		ITNA	78BEH 01
						1.2	0.2		ITNA	80MIC 01
<u>Sb (ng/g)</u>						20	6		RTNA	77MEL 01
4			RTNA	79MAY 01		<u>Se (ug/g)</u>				
4			RTNA	75LIE 01		0.228	0.011		FLUOR	74IHN 02
4	1		RTNA	80SLO 01		0.4	0.27		FAA	81MEY 01
4.8	0.5		RTNA	77LIE 01		0.69	0.06		NAA	78GAN 01
4.8	1.2		RTNA	79ROS 02		0.75			FAA	74IHN 01
5			HAA	79EVA 01		0.76		7	ICPES	84MIA 01
5	2		RTNA	79HOE 01		0.774			HAA	77IHN 01
5.7	0.5		ITNA	86GRE 01		0.8			CPXRF	84KAU 01
7	5		ITNA	78BEH 01		0.9		11	FAA	82VER 03
9	3		RTNA	74HEN 01		0.91			FLUOR	78EGA 01
10	2		RTNA	78GAL 01		0.92	0.04		HAA	82SUB 01
10	3		ITNA	80MIC 01		0.92	0.18	6	ITNA	74BEC 01
11	9		RTNA	74SCH 03		0.95	0.03		HAA	78EGA 01
12			ITNA	80CRE 01		0.97	0.03		ICPES	80HAA 01
12	2	7	RTNA	80GAL 02		0.972			FLUOR	79TAM 01
14	5		NAA	78GAN 01		0.98	0.01		HAA	76FIO 01
14	10		ITNA	77ZIK 01		0.98	0.03		DCPES	81CAR 02
15	4		RTNA	77TJI 01		0.98	0.05		GCMES	74TAL 02
16	2		ITNA	79CHA 02		0.98			ITNA	76DIK 01
16	7		ITNA	73COR 01		0.98			AA	79PAV 02
18		17	UU	74MAS 01		0.98	0.06		HAA	78WEL 01
22.9		17	UU	74MAS 01		0.98	0.15	34	CPXRF	78JOL 01
26	1		RTNA	79WAR 02		1.00			FAA	82VER 03
34			ITNA	73NAD 01		1.00		11		

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Se (ug/g) cont.</u>						<u>Se (ug/g) cont.</u>				
1.00		17	UU	74MAS 01		1.07	0.11	ITNA	78HIR 01	
1.00	0.01		ITNA	79SAT 01		1.07	0.18	RTNA	79PLA 01	
1.00	0.02		FAA	76IHN 02		1.07	0.19	RTNA	79ROS 02	
1.00	0.04		FAA	76IHN 01		1.08	0.01	CSV	83ADE 01	
1.00	0.1		RTNA	75ABU 01		1.08	0.01	ITNA	74L1N 01	
1.00	0.1	11	AA	85BYE 01		1.08	0.015	FAA	80NEV 01	
1.00	0.1	11	HAA	82JON 01		1.08	0.05	ASV	76AND 01	
1.00	0.1		ICPES	83OLI 01		1.08	0.08	AA	84MAT 01	
1.00	0.2		CPXRF	80MAE 01		1.08	0.12	ITNA	77GUI 02	
1.00	0.4		CPXRF	78VIS 01		1.08	0.13	6	ITNA	74BEC 01
1.01	0.04		ITNA	79CHA 04		1.08	0.2	FAA	79RAI 01	
1.01	0.06		ITNA	84ALK 01		1.09	0.01	ASV	83ADE 01	
1.02		11	HAA	85PIW 01		1.09	0.02	AA	79FLA 02	
1.02			ITNA	81HAN 01		1.09	0.02	34	HAA	78FLA 01
1.02	7		ICPES	84MIA 01		1.09	0.04	ITNA	86GRE 01	
1.02		17	UU	74MAS 01		1.09	0.05	RTNA	74ORV 01	
1.02			ITNA	81MEY 01		1.09	0.06	HAA	81HAN 01	
1.02	0.03		RTNA	77LIE 01		1.09	0.08	RTNA	79WAR 02	
1.02	0.03		RTNA	75LIE 01		1.1		FAA	77YAS 01	
1.02	0.03	9	ITNA	81SUZ 01		1.1		ITNA	80CRE 01	
1.02	0.04		HAA	80AGE 02		1.1		ITNA	77OSB 01	
1.02	0.06		IENA	86CHI 01		1.1		ITNA	78CAP 01	
1.02	0.438	5	RTNA	82TIN 01		1.1		11	FAA	82VER 03
1.03		6	FAA	77SHU 01		1.1	0.02	XRF	81KNA 01	
1.03	0.03		RTNA	77RAI 01		1.1	0.05	11	GC	81UCH 02
1.03	0.03		ITNA	79RAI 01		1.1	0.06	11	GC	81UCH 02
1.03	0.04	11	HAA	82JON 01		1.1	0.06	FLUOR	80KOH 01	
1.03	0.05		ITNA	80MIC 01		1.1	0.1	GC	77POO 01	
1.03	0.09		ITNA	81MOL 01		1.1	0.1	9	ITNA	80WAN 01
1.04			FLUOR	74IHN 01		1.1	0.13	11	RTNA	82POL 01
1.04	0.03		ITNA	86CHI 01		1.1	0.17	9	ITNA	77VOB 01
1.04	0.07		ITNA	74WES 01		1.1	0.17	9	ITNA	79PAV 02
1.04	0.1		RTNA	80KNA 01		1.1	0.17	9	ITNA	77VOB 01
1.045	0.04		ITNA	77EGA 01		1.1	0.2	EXRF	79GIA 01	
1.05		6	FAA	77SHU 01		1.1	0.2	HAA	82MAY 01	
1.05		7	ICPES	84MIA 01		1.1	0.3	ITNA	79ZEI 01	
1.05	0.05		HAA	80VIJ 01		1.1	0.4	5	ITNA	80TOU 01
1.05	0.12		RTNA	80SLO 01		1.107	0.15	NAA	76GUZ 01	
1.05	0.19		ITNA	79LAK 01		1.11	0.02	SSMS	77PAU 01	
1.053	0.051		COLOR	79SYZ 02		1.11	0.03	FAA	82JUL 01	
1.06			FAA	78CAP 01		1.11	0.04	SSMS	77ROO 02	
1.06	0.06		RTNA	78GAL 01		1.11	0.05	RTNA	74BYR 03	
1.06	0.06	7	RTNA	80GAL 02		1.11	0.06	HAA	76IHN 02	
1.06	0.1		RTNA	77TJI 01		1.11	0.08	13	ITNA	73BLO 02
1.06	0.11	11	RTNA	82POL 01		1.11	0.09	12	FAA	84RIN 01
1.069	0.016		ITNA	82DAM 01		1.11	0.1	ITNA	79CHA 02	
1.07			RTNA	75STE 02		1.12	0.02	FLUOR	84ALF 01	
1.07	0.02		AA	83RAP 01		1.12	0.03	ASV	75AND 01	
1.07	0.04		GC-MS	81REA 02		1.12	0.075	HAA	81MEY 01	
1.07	0.06	5	ITNA	81SUZ 01		1.12	0.08	11	RTNA	82POL 01
1.07	0.1		RTNA	79MAY 01		1.12	0.08	RTNA	72ROO 03	

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Se (ug/g) cont.</u>						<u>Se (ug/g) cont.</u>				
1.12	0.08		RTNA	77ROO 02		1.26		17	UU	74MAS 01
1.12	0.09	7	RTNA	81KUC 01		1.26	0.15	5	FLUOR	81SUZ 01
1.12	0.1		ASV	81POS 01		1.28	0.24		CSV	83AHM 02
1.12	0.12	6	FLUOR	75OLS 01		1.3	0.4		RTNA	74SCH 03
1.13		17	UU	74MAS 01		1.4			FAA	82INU 01
1.13	0.03	11	ASV	84ADE 01		1.4	0.1		EXRF	80DYC 01
1.13	0.03		AA	85ADE 02		1.4	0.5	6	CPXRF	77WIL 03
1.13	0.05		ICPES	85NAK 01		1.7			ITNA	73NAD 01
1.13	0.09		ITNA	73COR 01		1.7	0.1		ITNA	78FUR 01
1.133	0.122		ITNA	82MOR 02		2.7			ICPES	85NAR 02
1.14	0.04		ITNA	78MCK 01		7.65	0.277	5	RTNA	82TIN 01
1.14	0.05		ITNA	80MAE 01		13.376	0.926	5	RTNA	82TIN 01
1.14	0.09		HAA	83KOL 01						
1.14	0.091		HAA	82TAM 01						
1.14	0.11		ITNA	77JUR 02						
1.14	0.11		ITNA	79PAV 02		0.3	0.07		GC	81TOE 01
1.14	0.11		ITNA	77VOB 01		0.31	0.11		COLOR	81TOE 01
1.14	0.11		ITNA	78BEH 01						
1.15	0.02		FLUOR	83KOH 01						
1.15	0.04		ITNA	80LAK 01						
1.15	0.08	11	ASV	84ADE 01		16.7	0.67		ITNA	75PIE 01
1.16			CSV	81MAN 01		16.79	1.84		NAA	76GUZ 01
1.16	0.08		FAA	84BAU 01		19		11	SSMS	85VOS 01
1.16	0.09	12	FAA	84RIN 01		246			CPXRF	84KAU 01
1.17	0.06	6	FLUOR	75OLS 01						
1.17	0.18		HAA	82JUL 01						
1.18		11	HAA	85PIW 01						
1.18	0.14		RTNA	74HEN 01		1	0.2		RTNA	74HEN 01
1.19	0.11	13	ITNA	73BLO 02		1.3	0.4		RTNA	80SLO 01
1.2	1		IENA	79KUC 01		1.5	0.2		RTNA	83TJI 01
1.2			ITNA	79KUC 01		1.6			RTNA	82LAU 01
1.2			FAA	77YAS 01		1.6			RTNA	77LAU 02
1.2			ICPES	80HAA 01		1.9	0.2		RTNA	76GAU 01
1.2		7	RTNA	81KUC 01		2	0.2		RTNA	86TSU 01
1.2	0.1		ITNA	80WAN 01		2.8			ITNA	80CRE 01
1.2	0.1		RTNA	77MEL 01		35	24		RTNA	74SCH 03
1.2	0.1	7	RTNA	80GAL 02						
1.2	0.1		ITNA	81KRI 01						
1.2	0.1		NAA	77GIL 01						
1.2	0.1		RTNA	77GIL 03		<	240	L	RTNA	81KUC 01
1.2	0.1		CPXRF	77WIL 02		<	600		RTNA	75LIE 01
1.2	0.11		RTNA	77OMI 01		<	600	L	RTNA	77LIE 01
1.2	0.155		ITNA	77HAM 01		<	1500	L	ICPES	78CAP 01
1.2	0.16		HAA	81REA 01		10			HAA	79EVA 01
1.2	0.2	11	AA	85BYE 01		20	3		RTNA	83GRE 02
1.2	0.2		HAA	81COX 01		20	6		ITNA	86GRE 01
1.204	0.124		HAA	77IHN 03		21	3		RTNA	77BYR 01
1.22	0.04		COLOR	81TOE 01		220	180		ICPES	80HAA 01
1.23		17	UU	74MAS 01						
1.24	0.04		GC	81TOE 01						
1.24	0.3		CPXRF	85CLA 01						

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sr (ng/g)</u>					<u>Tm (ng/g)</u>					
100		11	SSMS	85VOS 01		<	0.3	L	RTNA	76GAU 01
150	20		RTNA	76GAU 01		0.1			RTNA	82LAU 01
160			ICPES	78DAH 01		0.15			RTNA	77LAU 02
160	20		FAA	82SUZ 03						
300	60		ICPES	79ABE 01		<u>U (ng/g)</u>				
500	180	34	CPXRF	78JOL 01		<	1		DNA	86GAU 01
550	440		AA	85EVA 01		<	20	L	ITNA	74WEA 01
2000	800		14NAA	81WIL 02		<	100	L	RTNA	76GAU 01
						<	2000	L	EXRF	79GIA 01
<u>Ta (ng/g)</u>					0.99	0.25	35	DNA	80GLA 04	
3			ITNA	80CRE 01	1	1.6		DNA	84GLA 02	
					20	48	R	DNA	81GLA 03	
<u>Tb (ng/g)</u>					<u>V (ng/g)</u>					
<	0.2		RTNA	83TJI 01		<	20	L	RTNA	77BUO 01
<	1.6	L	RTNA	76GAU 01		<	20	L	ITNA	74HOF 01
0.17			RTNA	82LAU 01		<	40	L	ITNA	74HOF 01
0.18			RTNA	77LAU 02		15	5		COLOR	82KIR 01
2			ITNA	80CRE 01		33	3		RTNA	79WAR 02
						55	1		FAA	77MYR 01
<u>Te (ng/g)</u>					56	17	UU		74MAS 01	
90	15		RTNA	77DIK 01		56	7		UU	73STE 01
					58.6	1.6		RTNA	78BYR 01	
<u>Th (ng/g)</u>					59			NAA	80KOS 02	
					60			ICPES	80HAA 01	
<	1000	L	EXRF	79GIA 01		60	2		RTNA	80W01 01
3	6	R*	RTNA	80SLO 01		60	5		RTNA	79CHA 02
6.8			ITNA	80CRE 01		61.5	2		RTNA	79COR 01
						61.5	2		RTNA	81COR 02
<u>Ti (ug/g)</u>					65	2		RTNA	82BYR 01	
					66.2	4.9		RTNA	78ALL 04	
<	0.15	L	ICPES	78CAP 01		90	60	11	ICPES	82JON 01
<	3.3		CPXRF	84KAU 01		320	80		RTNA	77GUI 03
<	4	L	14NAA	81WIL 02		370		11	SSMS	85VOS 01
<	11	L	EXRF	79GIA 01		400		11	SSMS	85VOS 01
0.7	0.2		COLOR	82KIR 02		460			ITNA	78CAP 01
1.7	0.2		ICPES	79ABE 01		500	100		ITNA	77ZIK 01
2	1		CPAA	77ZIK 01		600	100		ICPES	79ABE 01
3.2	1		14NAA	81WIL 01						
3.8		11	SSMS	85VOS 01	<u>W (ng/g)</u>					
4.7		11	SSMS	85VOS 01	3.8			RTNA	84BYR 01	
<u>Tl (ng/g)</u>					5	17	UU		74MAS 01	
					5	3		RTNA	74SCH 03	
<	2	11	ASV	84LIE 01		12			RTNA	76GAU 01
<	2	11	ASV	84LIE 01		15			RTNA	75STE 02
2		11	ASV	84LIE 01		30		17	UU	74MAS 01
48	3		SSMS	77PAU 01		700	100		RTNA	80SLO 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Y (ug/g)</u>						<u>Zn (ug/g) cont.</u>				
<	1	L	EXRF	79GIA 01		123.8	1.2		FAA	74GRO 01
<	14	L	14NAA	81WIL 01		124		17	UU	74MAS 01
<u>Yb (ng/g)</u>						124		6	POL	72SIN 01
						124			ITNA	78CAP 01
						124	7	7	AA	73TAL 01
<	0.1		RTNA	83TJI 01		124	7		FAA	74TAL 01
0.28			RTNA	82LAU 01		124	7.3	11	RTNA	74WES 01
0.285			RTNA	77LAU 02		124	10	D	ICPES	80SCH 08
0.48	0.09		RTNA	76GAU 01		124	10		ICPES	80SCH 05
830			ITNA	73NAD 01		124	14		CPXRF	79MAN 01
						124.4			RTNA	75HAL 01
<u>Zn (ug/g)</u>						125			ITNA	79KUC 01
						125			RTNA	75STE 02
13.17	17.59	R	AA	79MON 01		125	2		AA	79FLA 02
32			ASV	74COP 01		125	5	7	RTNA	80GAL 02
65	15		FAA	77FUJ 01		125	5		RTNA	77GIL 03
78	25		14NAA	81WIL 01		125	5		NAA	77GIL 01
93	17	12	FAA	85CAR 02		125	6		AA	83RAP 01
98	122	RD	ITNA	79IMA 03		125	16		ITNA	77HAM 01
98	122	R	ITNA	79IMA 01		125.7	10.6	34	CPXRF	78JOL 01
101		17	UU	74MAS 01		126			FAA	75SLA 01
102			FAA	83ATS 01		126	2		ITNA	80MAE 01
104			CPXRF	78UEM 01		126	4	7	AA	73TAL 01
106	31	12	FAA	85CAR 02		126	4		FAA	74TAL 01
112			XRF	80SUZ 02		126	4		SSMS	77PAU 01
112	15		ICPES	81BLA 01		126	5		ITNA	81MOL 01
112.6	1.1		FAA	81CLE 02		126	8		FAA	79WAR 01
113	5		FAA	84ROS 01		126	9		RTNA	74ORV 01
116			ITNA	73NAD 01		126	71		ITNA	82KIM 01
116	18		CPXRF	80MAE 01		127		11	FAA	81DAN 01
117	13		AA	79MAN 01		127		1	IENA	79KUC 01
117.2	10		RTNA	83DAN 01		127	1		RTNA	80SLO 01
118		11	ASV	81DAN 01		127	4		AA	80UCH 01
118	4	6	POL	72SIN 01		127	8	11	RTNA	74WES 01
118	21		RTNA	82KIM 01		127	9		ITNA	81KRI 01
118.2	7.8		IENA	75MAZ 01		127.9	9.1	6	ITNA	74BEC 01
119		6	POL	72SIN 01		128			DCPES	78NAK 01
120		17	UU	74MAS 01		128		7	RTNA	81KUC 01
120	6	11	ICPES	81BLA 02		128	3		FAA	81CLE 01
120	12		FAA	84HAR 02		128	3.6	11	AA	74WES 01
121	10	7	RTNA	84FAR 02		128	5		ITNA	79SAT 01
121	13		ICPES	85FAS 01		128	6		AA	75HIN 01
121.9			RTNA	74RAV 01		128	7		RTNA	79DER 01
122		11	FAA	81DAN 01		128	10		CPXRF	80KIR 01
122	3		NAA	78GAN 01		128	12		ITNA	79CHA 02
122	3		EXRF	80DYC 01		128	14		EXRF	77NIE 01
122	9		ITNA	79LAK 01		128	14		CPAA	77ZIK 01
123	5		ITNA	74WES 01		128	26		ICPES	82AZI 02
123	8	7	RTNA	84FAR 02		128.6			AA	79LOC 01
123	25		ITNA	78FUR 01		128.6	0.7		ITNA	82DAM 01
123	26		ICPES	84BLA 01		129			ICPES	80HAA 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Zn (ug/g) cont.</u>					<u>Zn (ug/g) cont.</u>				
129			ICPES	84NAD 01	134	2		EXRF	79GIA 01
129		1	IENA	79KUC 01	134	3		AA	79WAR 01
129			ITNA	80CRE 01	134	4	1	AA	77UCH 02
129	1.5		ITNA	86CHI 01	134	5	7	AE+AF	73TAL 01
129	3		ITNA	74DON 01	134	5		FAE	74TAL 01
129	4		RTNA	79WAR 02	134	5		RTNA	77TJI 01
129	4		ITNA	79WAR 01	134	6	11	ICPES	82JON 01
129	8		ITNA	80LAK 01	134	7	11	ICPES	82JON 01
129	16	32	CPXRF	77CRO 01	134	7.2		RTNA	79PLA 01
129.2	6		ITNA	84ALK 01	134	10	7	AE+AF	73TAL 01
130			OES	75BOL 02	134	10		FAE	74TAL 01
130		11	AA	81MOH 01	135		17	UU	74MAS 01
130	4	11	ICPES	81BLA 02	135			AE+AF	79ULL 01
130	4.5		AA	84HUD 01	135			ICPES	78CAP 01
130	4.5	D	AA	84HUD 03	135	1		ITNA	74LIN 01
130	5	1	ICPES	78SUD 01	135	2	11	ICPES	82JON 01
130	7		CPXRF	78VIS 01	135	2		ICPES	85WOL 01
130	13		FAA	80LON 01	135	4	11	ICPES	82JON 01
130	22		AA	82HAR 01	135	5		CPXRF	85CLA 01
131			AF	85NAR 02	135	5		RTNA	75LIE 01
131		14	FAA	80CHA 08	135	5		RTNA	77LIE 01
131		17	UU	74MAS 01	135	6		IENA	86CHI 01
131	1		AA	75ABU 01	135	7		AA	84CUB 01
131	1		AA	75EPS 01	136		11	XRF	83PEL 01
131	1		ICPES	79MCQ 02	136		17	UU	74MAS 01
131	1.4		AA	80AGE 01	136	1.8	6	DCPES	83FRA 01
131	2		ICPES	79MCQ 01	136	3		HPLC	85SAI 01
131	4		ITNA	80MIC 01	136	6		RTNA	76GAU 01
131	13.5		PAA	76KAT 04	136	9		RTNA	74HEN 01
131	37		EXRF	84KNA 01	137	2		ASV	85ADE 01
131.8	6.5		ITNA	73COR 01	137	4		ITNA	74GUI 01
132	1		AF	75EPS 01	137	9	5	ITNA	80TOU 01
132	3		GC	81BLA 01	137.2	5.75		NAA	76GUZ 01
132	3.3	6	CPXRF	77WIL 03	138	3		ITNA	86GRE 01
132	5		AA	79MCQ 01	139		17	UU	74MAS 01
132	6	7	RTNA	81KUC 01	139		11	SSMS	85VOS 01
132	7	1	AA	77UCH 02	139	5		ICPES	82EVA 01
132	7		AA	80IID 01	140			ITNA	77OSB 01
132	10		CPXRF	81SAI 01	140		11	AA	81MOH 01
132	15		ICPES	83SCH 04	140			ICPES	78DAH 01
133		11	ASV	81DAN 01	140	2.4	6	DCPES	83FRA 01
133			CPXRF	84KAU 01	140	16		RTNA	77KUS 01
133		14	FAA	80CHA 08	140	29		XRF	77SMI 04
133	4	7	RTNA	84FAR 02	141	2	D	DCPES	81REE 01
133	6		ICPES	78JAC 01	141	2		DCPES	79REE 01
133	7		ITNA	77JUR 02	141	16	5	RTNA	74SCH 03
133	7		ITNA	78BEH 01	141.7	5.3	6	ITNA	74BEC 01
133.9	6.8		ITNA	79ZEI 01	142			AA	80EVA 01
134			ICPES	85NAR 02	142	4		AA	82EVA 01
134		17	UU	74MAS 01	142	11		ITNA	77ZIK 01
134	2		RTNA	77MEL 01	143	19		ICPES	79ABE 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Almer	Com	Method	Reference	
<u>Zn (ug/g) cont.</u>					
144	12	6	CPXRF	77WIL 03	
144	17		CPXRF	84BIS 01	
145			PAA	78CAP 01	
145		11	SSMS	85VOS 01	
145	5		CPXRF	77WIL 02	
145.5			ITNA	82AKA 01	
146	12		ICPES	82AZI 01	
147	7.3	11	AA	74WES 01	
148	15		CPAA	78MCG 01	
148	74		CPXRF	76ZEI 01	
150	10		PAA	76WIL 01	
153	2		ICPES	85WHI 02	
156	6.2		CPXRF	81ROB 02	
157	20	1	ICPES	78SUD 01	
159	8	5	RTNA	74SCH 03	
160		17	UU	74MAS 01	
160		17	UU	74MAS 01	
162	31	32	CPXRF	77CRO 01	
200	40		14NAA	81WIL 02	
<u>Zr (ug/g)</u>					
<	0.5	L	14NAA	81WIL 02	
<	3	L	14NAA	81WIL 01	
<	3	I	EXRF	79GIA 01	
0.09	0.08		PAA	84SAT 01	
1.6		11	SSMS	85VOS 01	
3.4	0.4		PAA	79CHA 02	
4	3		CPAA	77ZIK 01	

TABLE 1577A-1: COMPILED DATA FOR NBS SRM 1577A BOVINE LIVER (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	AA	Mean ± SD (n)	NAA	Mean ± SD (n)	XRF	Mean (n)	OTHER METHODS
		Mean ± SD	n	Mean ± SD	n									
Ag	ng/g	40 ± 10	---	3.4 (1)	---	---	---	---	---	3.4 (1)	---	---	---	---
Al	ug/g	2	3.4	(1)	---	---	---	---	40 (1)	52.5 (2)	---	---	---	---
As	ng/g	47 ± 6	48 ± 8 (3)	49	40 - 56	40	(1)	3.4 (1)	52.5 (2)	9.6 ± 1.2 (4)	9.6 ± 1.2 (4)	---	---	---
Br	ug/g	9	9.6 ± 1.3 (4)	9	8.5 - 11.2	---	---	---	---	127 (1)	127 (1)	145 (1)	145 (1)	ICPMS
Ca	ug/g	120 ± 7	121 ± 5 (26)	123	111.3 - 129.7	121 ± 5	(25)	---	---	440 (1)	440 (1)	---	---	---
Cd	ng/g	440 ± 60	455 (2)	---	440 - 470	470	(1)	2700 ± 110 (4)	2700 ± 110 (4)	2700 ± 110 (4)	2700 ± 110 (4)	---	---	---
Cf	ug/g	2800 ± 100	2700 ± 110 (4)	2650	2570 - 2800	---	---	249 (2)	249 (2)	249 (2)	249 (2)	---	---	---
Co	ng/g	210 ± 50	249 (2)	---	244 - 254	---	---	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	---	---	---
Cr	ug/g	---	1.0 (1)	---	---	---	---	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	160 (1)	160 (1)	ICPMS
Cu	ug/g	158 ± 7	149 ± 14 (30)	153.6	114.2 - 164	149 ± 14	(24)	155 ± 12 (3)	155 ± 12 (3)	155 ± 12 (3)	155 ± 12 (3)	145 (2)	145 (2)	---
Fe	ug/g	194 ± 20	155 ± 17 (25)	155.9	116.1 - 181	153 ± 16	(22)	181 (1)	181 (1)	181 (1)	181 (1)	163.5 (2)	163.5 (2)	---
Hg	ng/g	4 ± 2	3.15 (2)	---	3 - 3.3	---	---	3.15 (2)	3.15 (2)	3.15 (2)	3.15 (2)	---	---	---
I	ng/g	---	243 (2)	---	240 - 246	---	---	243 (2)	243 (2)	243 (2)	243 (2)	---	---	---
K	%	0.996 ± 0.007	1.00 ± 0.13 (3)	0.95	0.894 - 1.15	---	---	1.05 (2)	1.05 (2)	1.05 (2)	1.05 (2)	0.894 (1)	0.894 (1)	ICPMS
Mg	ug/g	600 ± 15	612 ± 36 (3)	624	571 - 640	---	---	606 (2)	606 (2)	606 (2)	606 (2)	624 (1)	624 (1)	ICPMS
Mn	ug/g	9.9 ± 0.8	9.9 ± 0.4 (34)	9.8	9.1 - 10.8	9.9 ± 0.4	(29)	9.7 ± 0.6 (3)	9.7 ± 0.6 (3)	9.7 ± 0.6 (3)	9.7 ± 0.6 (3)	10.5 (1)	10.5 (1)	ICPMS
Mo	ug/g	3.5 ± 0.5	3.43 (2)	---	3.4 - 3.47	---	---	3.44 (2)	3.44 (2)	3.44 (2)	3.44 (2)	---	---	---
N	%	10.7	---	---	---	---	---	---	---	---	---	---	---	---
Na	ug/g	2430 ± 130	2410 ± 220 (3)	2450	2170 - 2600	---	---	2525 (2)	2525 (2)	2525 (2)	2525 (2)	2170 (1)	2170 (1)	ICPMS
P	%	1.11 ± 0.04	1.18 (1)	---	---	---	---	---	---	---	---	1.18 (1)	1.18 (1)	ICPMS
Pb	ng/g	135 ± 15	168 ± 29 (4)	150	150 - 210	150	(1)	---	---	12.2 (1)	12.2 (1)	---	---	DCPES
Rb	ug/g	12.5 ± 0.1	12.2 (1)	---	---	---	---	---	---	---	---	170 ± 30 (3)	170 ± 30 (3)	---
S	ug/g	7800 ± 100	8300 ± 500 (4)	7900	7845 - 8860	---	---	8860 (1)	8860 (1)	8860 (1)	8860 (1)	7845 (1)	7845 (1)	IDMS
S	ug/g	---	---	---	---	---	---	---	---	---	---	7900 (1)	7900 (1)	ICPMS
S-32/34	ratio	---	22.555 (1)	---	---	---	---	---	---	31 (1)	31 (1)	8550 (1)	8550 (1)	CB
S-33/34	ratio	---	0.1776 (1)	---	---	---	---	---	---	0.8 (1)	0.8 (1)	22.555 (1)	22.555 (1)	IDMS
Sb	ng/g	3	31 (1)	---	---	---	---	31 (1)	31 (1)	31 (1)	31 (1)	0.1776 (1)	0.1776 (1)	IDMS
Sc	ng/g	---	0.8 (1)	---	---	---	---	0.8 (1)	0.8 (1)	0.8 (1)	0.8 (1)	---	---	---
Se	ng/g	710 ± 70	780 ± 200 (5)	779	580 - 1100	875	(2)	685 (2)	685 (2)	779 (1)	779 (1)	---	---	---
Sr	ng/g	138 ± 3	---	---	---	---	---	---	---	---	---	---	---	---
Tl	ng/g	3	---	---	---	---	---	---	---	---	---	---	---	---
U	ng/g	0.71 ± 0.03	0.704 (1)	---	---	---	---	< 1	< 1	---	---	0.704 (1)	0.704 (1)	IDMS
V	ng/g	99 ± 8	97 (2)	---	96 - 98.7	---	---	96 (1)	96 (1)	96 (1)	96 (1)	98.7 (1)	98.7 (1)	IDMS
Zn	ug/g	123 ± 8	122 ± 4 (27)	122.8	111.6 - 130.1	122 ± 4	(25)	127 (1)	127 (1)	126 (1)	126 (1)	---	---	---

TABLE 1577A-2: INDIVIDUAL DATA FOR NBS SRM 1577A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Al (ug/g)</u>										
3.4	0.8		ITNA	84GLA	11	440	10		RTNA	84BYR 02
470						470	10		FAA	85SAL 01
<u>As (ng/g)</u>										
40	10		HAA	85SAL	01	2570			ITNA	85GAU 04
49	4		RTNA	85GAU	04	2650	300		IENA	84GLA 11
56	3		RTNA	84BYR	02	2780	150		ITNA	84GLA 11
2800						2800	100		ITNA	86KRA 01
<u>Br (ug/g)</u>										
8.5	1		IENA	84GLA	11	244			ITNA	86KRA 01
9	0.9		ITNA	84GLA	11	254	21		RTNA	84BYR 02
<u>Ca (ug/g)</u>										
25	1.1	11	AA	84IMA	02	1	0.3		ITNA	86KRA 01
26.1	1.4	11	AA	84IMA	02	62.3				
111.3		11	AA	84IMA	02	73.7				
112.9		11	AA	84IMA	02	100.5	2.4			
113.2	2.6	11	AA	84IMA	02	108.9				
113.5		11	AA	84IMA	02	114.2				
115.7	3.5	11	AA	84IMA	02	126	0.5			
116.2		11	AA	84IMA	02	129.2	2.7			
117.3	10.3	11	AA	84IMA	02	129.4	7.2			
117.6		11	AA	84IMA	02	131				
117.7	27.9	11	AA	84IMA	02	136.1	4.1			
118.6		11	AA	84IMA	02	136.6	2.2			
120.7		11	AA	84IMA	02	137.2				
121.3		11	AA	84IMA	02	141	5		RTNA	84BYR 02
122.2	3.3	11	AA	84IMA	02	142.9				
123		11	AA	84IMA	02	149.1	4.9			
124.1	8.4	11	AA	84IMA	02	149.9	4.2			
124.1	9.1	11	AA	84IMA	02	151.4	12.7			
124.1	9.2	11	AA	84IMA	02	153.6				
124.7		11	AA	84IMA	02	153.6	8.3			
124.9		11	AA	84IMA	02	154.8				
125	0.2	11	AA	84IMA	02	156	4			
126.5	9.1	11	AA	84IMA	02	157.6	1.2			
126.5	9.1	11	AA	84IMA	02	159				
127	9		CPXRF	85SIM	01	159	6			
127.6	12	11	AA	84IMA	02	159.1				
129.3	1.4	11	AA	84IMA	02	159.1	5.5			
129.7	13.2	11	AA	84IMA	02	160	0.6			
145	3		ICPMS	86SCI	01	160.4				
160	60		ITNA	84GLA	11	160.7	9.3			
<u>Cd (ng/g)</u>										
<u>Cl (ug/g)</u>										
<u>Co (ng/g)</u>										
<u>Cr (ug/g)</u>										
<u>Cu (ug/g)</u>										

TABLE 1577A-2: INDIVIDUAL DATA FOR NBS SRM 1577A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g) cont.</u>										
162.7	6.5	11	AA	84IMA 02		0.894	0.03		ICPMS	86SCI 01
162.7	6.5	11	AA	84IMA 02		0.95	0.02		ITNA	84GLA 11
163.1	3.2	11	AA	84IMA 02		1.15	0.17		ITNA	86KRA 01
163.6		11	AA	84IMA 02						
164	10		ITNA	86KRA 01						
<u>Fe (ug/g)</u>										
67.2	9.2	11	AA	84IMA 02		571	57		ITNA	86KRA 01
82.1	3.8	11	AA	84IMA 02		624	2		ICPMS	86SCI 01
95.8		11	AA	84IMA 02		640	30		ITNA	84GLA 11
105.9		11	AA	84IMA 02						
116.1		11	AA	84IMA 02						
119.8	1.6	11	AA	84IMA 02		8.4		11	AA	84IMA 02
135.1		11	AA	84IMA 02		9.1		11	AA	84IMA 02
136.9	8.6	11	AA	84IMA 02		9.1	0.08		ICPMS	86SCI 01
140		11	AA	84IMA 02		9.1	0.4		RTNA	84BYR 02
147		11	AA	84IMA 02		9.1	0.8	11	AA	84IMA 02
147.8	7.4	11	AA	84IMA 02		9.4		11	AA	84IMA 02
148.3	3.5	11	AA	84IMA 02		9.5		11	AA	84IMA 02
149		11	XRF	83PEL 01		9.5	0.6	11	AA	84IMA 02
149.7	10.8	11	AA	84IMA 02		9.58	0.38	6	FAA	85DOU 01
155.8		11	AA	84IMA 02		9.7		11	AA	84IMA 02
155.9	5.4	11	AA	84IMA 02		9.7	0.2	11	AA	84IMA 02
156.2	5.7	11	AA	84IMA 02		9.7	0.3	11	AA	84IMA 02
156.7	5.4	11	AA	84IMA 02		9.8		11	AA	84IMA 02
160.2	9.4	11	AA	84IMA 02		9.8		11	AA	84IMA 02
162.6		11	AA	84IMA 02		9.8		11	AA	84IMA 02
164.1	6.7	11	AA	84IMA 02		9.8		11	AA	84IMA 02
168.2		11	AA	84IMA 02		9.8	0.4		ITNA	86KRA 01
168.3	4.4	11	AA	84IMA 02		9.8	0.4	11	AA	84IMA 02
170.9		11	AA	84IMA 02		9.9	0.3	11	AA	84IMA 02
170.9	9.8	11	AA	84IMA 02		9.9	0.3	11	AA	84IMA 02
170.9	9.8	11	AA	84IMA 02		9.9	0.4	11	AA	84IMA 02
172.4		11	AA	84IMA 02		10.1	0.1	11	AA	84IMA 02
178		11	XRF	83PEL 01		10.1	0.3	11	AA	84IMA 02
181	28		ITNA	86KRA 01		10.1	0.7	11	AA	84IMA 02
202	2		ICPMS	86SCI 01		10.2	0.1	11	AA	84IMA 02
204.1	49	11	AA	84IMA 02		10.2	0.7	6	FAA	85DOU 01
						10.3		11	AA	84IMA 02
<u>Hg (ng/g)</u>										
<	10		CVAA	85SAL 01		10.3	0.5		ITNA	84GLA 11
3	0.2		RTNA	84DEL 01		10.3	1	6	FAA	85DOU 01
3.3	0.5		RTNA	84BYR 02		10.4	0.6	11	AA	84IMA 02
						10.5		11	XRF	83PEL 01
<u>I (ng/g)</u>										
<	400		ITNA	84GLA 11		10.5				
240	30		IENA	84GLA 11		10.7	0.2	11	AA	84IMA 02
246	11		RTNA	84BYR 02		10.8	0.4	11	AA	84IMA 02

TABLE 1577A-2: INDIVIDUAL DATA FOR NBS SRM 1577A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Mo (ug/g)</u>										
3.4	1.2		ITNA	86KRA 01		580	90		RTNA	84BYR 02
3.47	0.01		RTNA	84BYR 02		650	40		HAA	85SAL 01
<u>Na (ug/g)</u>										
2170	70		ICPMS	86SCI 01		779	34		CPXRF	84BUS 01
2450	30		ITNA	86KRA 01		790	180		ITNA	86KRA 01
2600	200		ITNA	84GLA 11		1100	100		HAA	85CUT 01
<u>P (%)</u>										
1.18	0.005		ICPMS	86SCI 01		< 0.704	1	0.012	DNA IDMS	86GAU 01 83KEL 01
<u>Pb (ng/g)</u>										
150	6		DCPES	84SNE 01		96	4		RTNA	84BYR 02
150	10		FAA	85SAL 01		98.7	1.6		IDMS	85FAS 02
160	6		DCPES	84SNE 01		<u>Zn (ug/g)</u>				
210	6		DCPES	84SNE 01		109.6		11	AA	84IMA 02
<u>Rb (ug/g)</u>										
12.2	0.7		ITNA	86KRA 01		109.6		11	AA	84IMA 02
<u>S (ug/g)</u>										
7845	46		IDMS	84KEL 01		111.6		11	AA	84IMA 02
7900	200		ICPMS	86SCI 01		115.4	8.1	11	AA	84IMA 02
8550	70		CB	86BOW 01		116.4		11	AA	84IMA 02
8860	170		WXRF	86BOW 01		117	4.4	11	AA	84IMA 02
<u>S-32/34 (ratio)</u>										
22.555			IDMS	84KEL 01		117.9		11	AA	84IMA 02
<u>S-33/34 (ratio)</u>										
0.1776			IDMS	84KEL 01		118		11	AA	84IMA 02
<u>Sb (ng/g)</u>										
31	1		RTNA	84BYR 02		119	3.3	11	AA	84IMA 02
<u>Sc (ng/g)</u>										
0.8			ITNA	84GLA 11		120	5.2	11	AA	84IMA 02

TABLE 1580-1: COMPILED DATA FOR NBS SRM 1580 ORGANICS IN SHALE OIL (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD
Benzo[a]pyrene	50328	ug/g	21 ± 6
Benzo[e]pyrene	192972	ug/g	18 ± 8
Benzo[f]quinoline	85029	ug/g	16 ± 4
m-Cresol	108394	ug/g	330
o-Cresol	95487	ug/g	385 ± 50
p-Cresol	106445	ug/g	270
2,4-Dimethylphenol	105679	ug/g	380
2,5-Dimethylphenol	95874	ug/g	320
2,6-Dimethylphenol	576261	ug/g	175 ± 30
Fluoranthene	206440	ug/g	54 ± 10
Perylene	198550	ug/g	3.4 ± 2.2
Phenanthridine	229878	ug/g	45
Phenol	108952	ug/g	407 ± 50
Pyrene	129000	ug/g	104 ± 18
2,5,6-Trimethylphenol	2416946	ug/g	360
2,4,6-Trimethylphenol	527606	ug/g	120

TABLE 1581-1: COMPILED DATA FOR NBS SRM 1581 POLYCHLORINATED BIPHENYLS IN OILS  
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD
Aroclor 1242 in Motor Oil	53469219	ug/g	100 ± 1
Aroclor 1260 in Motor Oil	11096825	ug/g	100 ± 2
Aroclor 1242 in Transformer Oil	53469219	ug/g	100 ± 1
Aroclor 1260 in Transformer Oil	11096825	ug/g	100 ± 3

TABLE 1583-1: COMPILED DATA FOR NBS SRM 1583 CHLORINATED PESTICIDES IN 2,2,4-TRIMETHYLPENTANE  
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD
gamma-BHC	58899	ug/g	1.11 ± 0.01
delta-BHC	319868	ug/g	0.76 ± 0.01
Aldrin	309002	ug/g	0.86 ± 0.01
p,p'-DDE	72559	ug/g	1.23 ± 0.03
p,p'-DDT	50293	ug/g	1.90 ± 0.10
Heptachlor Epoxide	1024573	ug/g	1.0

TABLE 1582-1: COMPILED DATA FOR NBS SRM 1582 PETROLEUM CRUDE OIL (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS
			Mean ± SD	Mean ± SD (n)	Mean (n) Method			
Benz[a]anthracene	56553	ug/g	3.0 ± 0.3	---	---	---	---	---
Benzo[ghi]perylene	191242	ug/g	---	1.7 (1)	---	---	---	1.7 (1) GC-MS
	192242	ug/g	1.7	---	---	---	---	---
Benzo[a]pyrene	50328	ug/g	1.1 ± 0.3	1.08 ± 0.12 (3)	1.1	0.95 - 1.2	1.2 (1) HPLC	
	50328	ug/g	---	---	---	---	1.02 (2) GC-MS	
Benzo[e]pyrene	192972	ug/g	3.5	---	---	---	---	---
Carbazole	86748	ug/g	3.4	---	---	---	---	---
o-Cresol	95487	ng/g	500	---	---	---	---	---
Dibenzothiophene	132650	ug/g	33 ± 2	---	---	---	---	---
Fluoranthene	206440	ug/g	2.5 ± 0.3	---	---	---	---	---
Indeno[1,2,3-cd]pyrene	193395	ng/g	170	170 (1)	---	---	---	170 (1) GC-MS
Perylene	198550	ug/g	31 ± 3	30.9 ± 1.4 (3)	30.2	30 - 32.6	30.1 (2) GC-MS	
	198550	ug/g	---	---	---	---	32.6 (1) HPLC	
Phenanthrene	85018	ug/g	101 ± 5	---	---	---	---	---
Phenol	108952	ng/g	300	---	---	---	---	---
Pyrene	129000	ug/g	7	---	---	---	---	---

TABLE 1582-2: INDIVIDUAL DATA FOR NBS SRM 1582  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Benzo[ghi]perylene (ug/g)</u>				
1.7	0.1		GC-MS	84HIL 01
<u>Benzo[a]pyrene (ug/g)</u>				
0.95	0.05		GC-MS	84HIL 01
1.1	0.23		GC-MS	84HIL 01
1.2	0.1		HPLC	84HIL 01
<u>Indeno[1,2,3-cd]pyrene (ng/g)</u>				
170	40		GC-MS	84HIL 01
<u>Perylene (ug/g)</u>				
30	1.1		GC-MS	84HIL 01
30.2	1.7		GC-MS	84HIL 01
32.6	1.2		HPLC	84HIL 01

TABLE 1584-1: COMPILED DATA FOR NBS SRM 1584 PRIORITY POLLUTANT PHENOLS IN METHANOL  
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS	CONSENSUS	METHOD
			Mean ± SD		
4-Chloro-m-cresol	59507	ug/mL	27.4 ± 0.4	---	
2-Chlorophenol	95578	ug/mL	64.4 ± 1.4	---	
o-Cresol	108394	ug/mL	---	< 1	GC
2,4-Dichlorophenol	120832	ug/mL	35.6 ± 1.3	---	
2,3-Dimethylphenol	526750	ug/mL	---	< 1	GC
2,4-Dimethylphenol	105679	ug/mL	51.6 ± 0.2	48.6 (1)	GC
2,6-Dimethylphenol	576261	ug/mL	---	< 1	GC
3,4-Dimethylphenol	95658	ug/mL	---	< 1	GC
4,6-Dinitro-o-cresol	534521	ug/mL	20.1 ± 0.9	---	
2,4-Dinitrophenol	51285	ug/mL	22.4	---	
m-Ethylphenol	620177	ug/mL	---	< 1	GC
o-Ethylphenol	90006	ug/mL	---	< 1	GC
p-Ethylphenol	1230709	ug/mL	---	< 1	GC
2-Methylphenol	95487	ug/mL	---	< 1	GC
2-Nitrophenol	88755	ug/mL	25.2 ± 0.7	---	
4-Nitrophenol	100027	ug/mL	20.7 ± 0.7	---	
Pentachlorophenol	87865	ug/mL	15.4 ± 1.1	---	
Phenol	108952	ug/mL	29.7 ± 0.9	27.2 (1)	GC
2,4,6-Trichlorophenol	88062	ug/mL	20.4 ± 1.9	---	

TABLE 1584-2: INDIVIDUAL DATA FOR NBS SRM 1584 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>o-Cresol (ug/mL)</u>									
<	1		GC	85GAU 04	<	1		GC	85GAU 04
<u>2,3-Dimethylphenol (ug/mL)</u>									
<	1		GC	85GAU 04	<	1		GC	85GAU 04
<u>2,4-Dimethylphenol (ug/mL)</u>									
48.6			GC	85GAU 04	<	1		GC	85GAU 04
<u>2,6-Dimethylphenol (ug/mL)</u>									
<	1		GC	85GAU 04	<	1		GC	85GAU 04
<u>3,4-Dimethylphenol (ug/mL)</u>									
<	1		GC	85GAU 04	27.2			GC	85GAU 04
<u>m-Ethylphenol (ug/mL)</u>									
<u>o-Ethylphenol (ug/mL)</u>									
<u>p-Ethylphenol (ug/mL)</u>									
<u>2-Methylphenol (ug/mL)</u>									
<u>Phenol (ug/mL)</u>									

TABLE 1585-1: COMPILED DATA FOR NBS SRM 1585 CHLORINATED BIPHENYLS IN ISOCTANE  
 (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS
			Mean ± SD
4-Chlorobiphenyl	2051629	ug/g	43.3 ± 1.0
4,4'-Dichlorobiphenyl	2050682	ug/g	9.53 ± 0.08
2,4,4'-Trichlorobiphenyl	7012375	ug/g	3.70 ± 0.02
2,2',5,5'-Tetrachlorobiphenyl	35693993	ug/g	7.72 ± 0.06
3,3',4,4'-Tetrachlorobiphenyl	32598133	ug/g	6.62 ± 0.05
2,2',4,5,5'-Pentachlorobiphenyl	37680732	ug/g	5.24 ± 0.02
2,2',3,4,4',5'-Hexachlorobiphenyl	35065282	ug/g	2.37 ± 0.02
2,2',4,4',5,5'-Hexachlorobiphenyl	35065271	ug/g	3.06 ± 0.02

TABLE 1587-1: COMPILED DATA FOR NBS SRM 1587 NITRATED POLYCYCLIC AROMATIC HYDROCARBONS IN METHANOL  
 (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS
			Mean ± SD
2-Nitrofluorene	607578	ug/g	9.67 ± 0.39
9-Nitroanthracene	602608	ug/g	5.01 ± 0.11
3-Nitrofluoranthene	829217	ug/g	9.24 ± 0.06
1-Nitropyrene	5522430	ug/g	8.95 ± 0.28
7-Nitrobenz[a]anthracene	20268513	ug/g	9.27 ± 0.23
6-Nitrochrysene	7496028	ug/g	8.13 ± 0.11
6-Nitrobenzo[a]pyrene	63041907	ug/g	6.1

TABLE 1589-1: COMPILED DATA FOR NBS SRM 1589 POLYCHLORINATED BIPHENYLS IN HUMAN SERUM  
 (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS
			Mean + SD
Aroclor 1260	11096825	ng/g	106.0 ± 1.3
1,2,3,4-Tetrachlorodibenzo-p-dioxin	30746588	ng/g	0.153
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	ng/g	0.081

TABLE 1590-1: COMPILED DATA FOR NBS SRM 1590 STABILIZED WINE (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS Mean (n)	METHOD
		Mean	± SD		
As	ug/L	---		5.8 (1)	NAA
Cu	ug/L	300		270 (1)	NAA
Fe	mg/L	6		---	
K	mg/L	320		---	
Mn	ug/L	---		423 (1)	NAA
Na	mg/L	95		---	
Zn	ug/L	---		197 (1)	NAA
Volatile Acid	g/L	0.24		---	
Ethanol	%	18.51 ± 0.16		---	

TABLE 1590-2: INDIVIDUAL DATA FOR NBS SRM 1590 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>As (ug/L)</u>									
5.8		RTNA	84BYR 02		423	11		RTNA	84BYR 02
<u>Cu (ug/L)</u>									
270	14	RTNA	84BYR 02		197	14		RTNA	84BYR 02

TABLE 1614-1: COMPILED DATA FOR NBS SRM 1614 DIOXIN IN ISOCTANE (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	ng/g	98.3
2,3,7,8-Tetrachlorodibenzo-p-dioxin, C-13	76523405	ng/g	95.6

TABLE 1639-1: COMPILED DATA FOR NBS SRM 1639 HALOCARBONS IN METHANOL (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean
Chloroform	67663	ng/uL	6235
Chlorodibromomethane	124481	ng/uL	124.6
Bromodichloromethane	74975	ng/uL	389.9
Bromoform	75252	ng/uL	86.5
Carbon Tetrachloride	56235	ng/uL	157.0
Trichloroethylene	79016	ng/uL	85.8
Tetrachloroethylene	127184	ng/uL	40.6

TABLE 1618-1: COMPILED DATA FOR NBS SRM 1618 VANADIUM AND NICKEL IN RESIDUAL FUEL OIL  
(revised 3/1/86)

ELEMENT	UNITS	NBS
		Mean ± SD
ASH	%	0.083
Ni	ug/g	75.2 ± 0.4
S	%	4.3
V	ug/g	423.1 ± 3.4

TABLE 1619-1: COMPILED DATA FOR NBS SRM 1619 SULFUR IN RESIDUAL FUEL OIL  
(revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean ± SD		
Al	ug/g	4.3	---	---
Al	ug/mL	4	---	---
As	ng/g	---	94 (1)	NAA
B	ug/g	< 1.1	---	---
B	ug/mL	< 1	---	---
Br	ng/g	---	700 (1)	NAA
Ca	ug/g	10.6	---	---
Ca	ug/mL	10	---	---
Cl	ug/g	---	20 (1)	NAA
Co	ng/g	---	350 (1)	NAA
Cr	ng/g	< 1100	380 (1)	NAA
Cr	ug/mL	< 1	---	---
Cu	ug/g	< 1.1	---	---
Cu	ug/mL	< 1	---	---
Density	g/cm <sup>3</sup>	0.939	---	---
Eu	ug/g	---	10.2 (1)	NAA
Fe	ug/g	< 5.3	23 (1)	NAA
Fe	ug/mL	< 5	---	---
La	ng/g	---	37 (1)	NAA
Mg	ug/g	1.1	---	---
Mg	ug/mL	1	---	---
Mn	ug/g	< 1.1	---	---
Mn	ug/mL	< 1	---	---
Mo	ug/g	< 1.1	---	---
Mo	ug/mL	< 1	---	---
Na	ug/g	18	27 (1)	NAA
Na	ug/mL	17	---	---
Ni	ug/g	9.6	12 (1)	NAA
Ni	ug/mL	9	---	---
S	ug/g	7190 ± 70	7215 (2)	NM
Sb	ng/g	---	30 (1)	NAA
Sc	ug/g	---	1.39 (1)	NAA
Se	ng/g	---	95 (1)	NAA
Si	ug/g	2.2	---	---
Si	ug/mL	2	---	---
Sm	ug/g	---	2.45 (1)	NAA
Sn	ug/g	< 1.1	---	---
Sn	ug/mL	< 1	---	---
Ti	ug/g	< 1.1	---	---
Ti	ug/mL	< 1	---	---
V	ug/g	37	42.6 (1)	NAA
V	ug/mL	35	---	---
Zn	ug/g	4.3	1.27 (1)	NAA
Zn	ug/mL	4	---	---

TABLE 1619-2: INDIVIDUAL DATA FOR NBS SRM 1619 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference					
<u>As (ng/g)</u>														
94	10		ITNA	85FIL 02	12	1.1		ITNA	85FIL 02					
<u>Br (ng/g)</u>														
700	900		ITNA	85FIL 02	7130	110	7	NM	83LI 01					
<u>Cl (ug/g)</u>														
20	1.8		ITNA	83LI 01	7300	180	7	NM	83LI 01					
<u>Co (ng/g)</u>														
350	40		ITNA	85FIL 02	<u>Sb (ng/g)</u>									
<u>Cr (ng/g)</u>														
380	110		ITNA	85FIL 02	30	20		ITNA	85FIL 02					
<u>Eu (ug/g)</u>														
10.2	2.4		ITNA	85FIL 02	1.39	0.67		ITNA	85FIL 02					
<u>Fe (ug/g)</u>														
23	16		ITNA	85FIL 02	<u>Se (ng/g)</u>									
<u>La (ng/g)</u>														
37	6		ITNA	85FIL 02	95	27		ITNA	85FIL 02					
<u>Na (ug/g)</u>														
27	6		ITNA	85FIL 02	<u>Sm (ug/g)</u>									

TABLE 1620-1: COMPILED DATA FOR NBS SRM 1620 SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	
		Mean ± SD	
S	%	4.48 ± 0.02	

TABLE 1620A-1: COMPILED DATA FOR NBS SRM 1620A SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD (n)			Mean (n)	Method	
Al	ug/g	18	---	---	---	---	---	
Al	ug/mL	20	---	.	---	---	---	
As	ng/g	---	40 (1)	---	---	40	(1) NAA	
B	ug/g	< 0.9	---	---	---	---	---	
B	ug/mL	< 1	---	---	---	---	---	
Br	ng/g	---	600 (1)	---	---	600	(1) NAA	
Ca	ug/g	8.2	---	---	---	---	---	
Ca	ug/mL	9	---	---	---	---	---	
Cl	ug/g	---	11.8 (1)	---	---	11.8	(1) NAA	
Co	ng/g	---	80 (1)	---	---	80	(1) NAA	
Cr	ng/g	< 900	200 (1)	---	---	200	(1) NAA	
Cr	ug/mL	< 1	---	---	---	---	---	
Cu	ug/g	< 0.9	---	---	---	---	---	
Cu	ug/mL	< 1	---	---	---	---	---	
Density	g/cm <sup>3</sup>	1.096	---	---	---	---	---	
Eu	ng/g	---	10 (1)	---	---	10	(1) NAA	
Fe	ug/g	< 4.6	11 (1)	---	---	11	(1) NAA	
Fe	ug/mL	< 5	---	---	---	---	---	
Flash Pt.	deg. C	70	---	---	---	---	---	
La	ng/g	---	500 (1)	---	---	500	(1) NAA	
Mg	ug/g	< 0.9	---	---	---	---	---	
Mg	ug/mL	< 1	---	---	---	---	---	
Mn	ug/g	< 0.9	---	---	---	---	---	
Mn	ug/mL	< 1	---	---	---	---	---	
Mo	ug/g	< 0.9	---	---	---	---	---	
Mo	ug/mL	< 1	---	---	---	---	---	
Na	ug/g	28	9.4 (1)	---	---	9.4	(1) NAA	
Na	ug/mL	31	---	---	---	---	---	
Ni	ug/g	< 0.9	< 2	---	---	< 2	NAA	
Ni	ug/mL	< 1	---	---	---	---	---	
S	%	4.504 ± 0.010	4.48 ± 0.02 (3)	4.49	4.46 - 4.49	4.49	(1) ICPES	
S	%	---	---	---	---	4.48	(2) NM	
Sb	ng/g	---	100 (1)	---	---	100	(1) NAA	
Sc	ug/g	---	2 (1)	---	---	2	(1) NAA	
Se	ng/g	---	80 (1)	---	---	80	(1) NAA	
Si	ug/g	12	---	---	---	---	---	
Si	ug/mL	13	---	---	---	---	---	
Sm	ug/g	---	9 (1)	---	---	9	(1) NAA	
Sn	ug/g	< 0.9	---	---	---	---	---	
Sn	ug/mL	< 1	---	---	---	---	---	
Ti	ug/g	< 0.9	---	---	---	---	---	
Ti	ug/mL	< 1	---	---	---	---	---	
V	ng/g	< 900	< 200	---	---	< 200	NAA	
V	ug/mL	< 1	---	---	---	---	---	
Zn	ug/g	21	0.7 (1)	---	---	0.7	(1) NAA	
Zn	ug/mL	23	---	---	---	---	---	

TABLE 1620A-2: INDIVIDUAL DATA FOR NBS SRM 1620A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>As (ng/g)</u>									
40	10		ITNA	85FIL 02	<	2		ITNA	85FIL 02
<u>Br (ng/g)</u>									
600	600		ITNA	85FIL 02	4.46	0.13	7	NM	83LI 01
<u>Cl (ug/g)</u>									
11.8	1		ITNA	83LI 01	4.49	0.03		ICPES	85FAB 01
<u>Co (ng/g)</u>									
80	60		ITNA	85FIL 02	4.49	0.12	7	NM	83LI 01
<u>Cr (ng/g)</u>									
200	70		ITNA	85FIL 02	<u>Sb (ng/g)</u>				
<u>Eu (ng/g)</u>									
10	3		ITNA	85FIL 02	100	140		ITNA	85FIL 02
<u>Fe (ug/g)</u>									
11	7		ITNA	85FIL 02	<u>Sc (ug/g)</u>				
<u>La (ng/g)</u>									
500	300		ITNA	85FIL 02	2	0.6		ITNA	85FIL 02
<u>Na (ug/g)</u>									
9.4	2.9		ITNA	85FIL 02	80	20		ITNA	85FIL 02
<u>V (ng/g)</u>									
<u>Zn (ug/g)</u>									
< 200									
0.7	0.5								
ITNA									
85FIL 02									

TABLE 1621-1: COMPILED DATA FOR NBS SRM 1621 SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	METHOD MEANS	
		Mean $\pm$ SD	Mean $\pm$ SD (n)			Mean (n) Method	
S	%	1.05 $\pm$ 0.02	1.01 $\pm$ 0.05 (5)	1.05	0.9 - 1.06	1.06 (1) XRF	
S	%	---	---	---	---	0.99 (1) IC	
S	%	---	---	---	---	0.9 (1) MECA	
S	%	---	---	---	---	1.05 (1) TITR	
S	%	---	---	---	---	1.05 (1) CB	

TABLE 1621-2: INDIVIDUAL DATA FOR NBS SRM 1621 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (%)</u>				
0.9	0.1	MECA	80MCC 01	
0.99	0.03	IC	80MCC 01	
1.05	0.01	CB	84LEC 02	
1.05	0.03	TITR	80MCC 01	
1.06		XRF	80MCC 01	

TABLE 1621A-1: COMPILED DATA FOR NBS SRM 1621A SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	METHOD MEANS	
		Mean $\pm$ SD	Mean $\pm$ SD (n)			Mean (n) Method	
S	%	0.94 $\pm$ 0.01	0.94 $\pm$ 0.03 (7)	0.94	0.89 - 0.973	0.9715 (2) XRF	
S	%	---	---	---	---	0.935 (2) ICPES	
S	%	---	---	---	---	0.89 (1) POL	
S	%	---	---	---	---	0.945 (1) TITR	
S	%	---	---	---	---	0.931 (1) IC	

TABLE 1621A-2: INDIVIDUAL DATA FOR NBS SRM 1621A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (%)</u>				
0.89	0.07	POL	81REL 01	
0.93	0.02	ICPES	81WAL 02	
0.931	0.01	IC	82VIS 01	
0.94	0.02	ICPES	84BAR 03	
0.945	0.014	TITR	82VIS 01	
0.97	0.009 6	EXRF	81CHR 01	
0.973	0.008 6	EXRF	81CHR 01	

TABLE 1621B-1: COMPILED DATA FOR NBS SRM 1621B SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean	± SD	Mean	± SD			Mean	± SD	(n) Method
Al	ug/g	6.5	---	---	---	---	---	---	---	---
Al	ug/mL	6	---	---	---	---	---	---	---	---
B	ug/g	< 1.1	---	---	---	---	---	---	---	---
B	ug/mL	< 1	---	---	---	---	---	---	---	---
Ca	ug/g	9.7	---	---	---	---	---	---	---	---
Ca	ug/mL	9	---	---	---	---	---	---	---	---
Cr	ug/g	3.2	---	---	---	---	---	---	---	---
Cr	ug/mL	3	---	---	---	---	---	---	---	---
Cu	ug/g	< 1.1	---	---	---	---	---	---	---	---
Cu	ug/mL	< 1	---	---	---	---	---	---	---	---
Density	g/cm <sup>3</sup>	0.929	---	---	---	---	---	---	---	---
Fe	ug/g	< 5.4	---	---	---	---	---	---	---	---
Fe	ug/mL	< 5	---	---	---	---	---	---	---	---
Flash Pt.	deg. C	111	---	---	---	---	---	---	---	---
Mg	ug/g	< 1.1	---	---	---	---	---	---	---	---
Mg	ug/mL	< 1	---	---	---	---	---	---	---	---
Mn	ug/g	1.1	---	---	---	---	---	---	---	---
Mn	ug/mL	1	---	---	---	---	---	---	---	---
Mo	ug/g	< 1.1	---	---	---	---	---	---	---	---
Mo	ug/mL	< 1	---	---	---	---	---	---	---	---
Na	ug/g	8.6	---	---	---	---	---	---	---	---
Na	ug/mL	8	---	---	---	---	---	---	---	---
Ni	ug/g	6.5	---	---	---	---	---	---	---	---
Ni	ug/mL	6	---	---	---	---	---	---	---	---
S	%	0.95 ± 0.005		0.948 ± 0.014 (7)		0.944	0.935 - 0.975	0.954 ± 0.015 (4)	XRF	
S	%	---		---		---	---	0.953 (1)	ICPES	
S	%	---		---		---	---	0.935 (2)	COUL	
Si	ug/g	6.5	---	---	---	---	---	---	---	---
Si	ug/mL	6	---	---	---	---	---	---	---	---
Sn	ug/g	< 1.1	---	---	---	---	---	---	---	---
Sn	ug/mL	< 1	---	---	---	---	---	---	---	---
Ti	ug/g	< 1.1	---	---	---	---	---	---	---	---
Ti	ug/mL	< 1	---	---	---	---	---	---	---	---
V	ug/g	16	---	---	---	---	---	---	---	---
V	ug/mL	15	---	---	---	---	---	---	---	---
Zn	ug/g	16	---	---	---	---	---	---	---	---
Zn	ug/mL	15	---	---	---	---	---	---	---	---

TABLE 1621B-2: INDIVIDUAL DATA FOR NBS SRM 1621B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (%)</u>				
0.935			COUL	84TAK 01
0.935			COUL	83TAK 01
0.944			XRF	83TAK 01
0.944			XRF	84TAK 01
0.953	0.003		ICPES	85FAB 01
0.953	0.031 32		EXRF	83SAN 02
0.975	0.031 32		EXRF	83SAN 02

TABLE 1622-1: COMPILED DATA FOR NBS SRM 1622 SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS			MEDIAN		RANGE		METHOD MEANS		
		Mean	± SD	Mean	± SD	(n)					Mean	(n)	Method
S	%	2.14	± 0.01	2.16		(2)	---		2.15 - 2.16		2.16	(1)	ICPES
S	%	---		---			---		---		2.15	(1)	CB

TABLE 1622-2: INDIVIDUAL DATA FOR NBS SRM 1622 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (%)</u>				
2.15	0.03		CB	84LEC 02
2.16	0.02		ICPES	85FAB 01

TABLE 1622A-1: COMPILED DATA FOR NBS SRM 1622A SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS			MEDIAN		RANGE		METHOD MEANS		
		Mean	± SD	Mean	± SD	(n)					Mean	(n)	Method
S	%	1.96	± 0.04	2.00	± 0.03	(4)	2.01		1.948 - 2.02		1.98	(2)	XRF
S	%	---		---			---		---		2.02	(2)	ICPES

TABLE 1622A-2: INDIVIDUAL DATA FOR NBS SRM 1622A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (%)</u>				
1.6	0.1		POL	81REL 01
1.948	0.018 6		EXRF	81CHR 01
2.01	0.02		ICPES	84BAR 03
2.011	0.015 6		EXRF	81CHR 01
2.02	0.02		ICPES	81WAL 02

TABLE 1622C-1: COMPILED DATA FOR NBS SRM 1622C SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	
		Mean	± SD
S	%	2.012	± 0.025

TABLE 1622B-1: COMPILED DATA FOR NBS SRM 1622B SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean	± SD	Mean	± SD			Mean	± SD	(n) Method
Al	ug/g	8.1	---	---	---	---	---	---	---	---
Al	ug/mL	8	---	---	---	---	---	---	---	---
B	ug/g	< 1	---	---	---	---	---	---	---	---
B	ug/mL	< 1	---	---	---	---	---	---	---	---
Ca	ug/g	24.4	---	---	---	---	---	---	---	---
Ca	ug/mL	24	---	---	---	---	---	---	---	---
Cr	ug/g	1	---	---	---	---	---	---	---	---
Cr	ug/mL	1	---	---	---	---	---	---	---	---
Cu	ug/g	< 1	---	---	---	---	---	---	---	---
Cu	ug/mL	< 1	---	---	---	---	---	---	---	---
Density	g/cm <sup>3</sup>	0.984	---	---	---	---	---	---	---	---
Fe	ug/g	< 5.1	---	---	---	---	---	---	---	---
Fe	ug/mL	< 5	---	---	---	---	---	---	---	---
Flash Pt.	deg. C	65	---	---	---	---	---	---	---	---
Mg	ug/g	2	---	---	---	---	---	---	---	---
Mg	ug/mL	2	---	---	---	---	---	---	---	---
Mn	ug/g	1	---	---	---	---	---	---	---	---
Mn	ug/mL	1	---	---	---	---	---	---	---	---
Mo	ug/g	< 1	---	---	---	---	---	---	---	---
Mo	ug/mL	< 1	---	---	---	---	---	---	---	---
Na	ug/g	25.4	---	---	---	---	---	---	---	---
Na	ug/mL	25	---	---	---	---	---	---	---	---
Ni	ug/g	15.2	---	---	---	---	---	---	---	---
Ni	ug/mL	15	---	---	---	---	---	---	---	---
S	%	1.982 ± 0.018		1.98 ± 0.01	(6)	1.979	1.971 - 2.01	2.00 ± 0.04	(4)	XRF
S	%	---	---	---	---	---	---	2.01	(1)	ICPES
S	%	---	---	---	---	---	---	1.98	(2)	COUL
Si	ug/g	13.2	---	---	---	---	---	---	---	---
Si	ug/mL	13	---	---	---	---	---	---	---	---
Sn	ug/g	< 1	---	---	---	---	---	---	---	---
Sn	ug/mL	< 1	---	---	---	---	---	---	---	---
Ti	ug/g	< 1	---	---	---	---	---	---	---	---
Ti	ug/mL	< 1	---	---	---	---	---	---	---	---
V	ug/g	51	---	---	---	---	---	---	---	---
V	ug/mL	50	---	---	---	---	---	---	---	---
Zn	ug/g	11.2	---	---	---	---	---	---	---	---
Zn	ug/mL	11	---	---	---	---	---	---	---	---

TABLE 1622B-2: INDIVIDUAL DATA FOR NBS SRM 1622B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
1.971	0.031	32	EXRF	83SAN 02
1.977			COUL	83TAK 01
1.977			COUL	84TAK 01
1.979			XRF	84TAK 01
1.979			XRF	83TAK 01
2.01	0.02	32	ICPES	85FAB 01
2.06	0.07	32	EXRF	83SAN 02

TABLE 1623-1: COMPILED DATA FOR NBS SRM 1623 SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS	
		Mean ± SD		Mean ± SD	(n)			Mean (n) Method	
S	ug/g	2680 ± 40		2710 ± 130	(4)	2650	2600 - 2900	2700 (1) XRF	
S	ug/g	---		---		---	---	2600 (1) MECA	
S	ug/g	---		---		---	---	2900 (1) TITR	
S	ug/g	---		---		---	---	2650 (1) IC	

TABLE 1623A-1: COMPILED DATA FOR NBS SRM 1623A SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS	
		Mean ± SD		Mean ± SD	(n)			Mean ± SD (n) Method	
Al	ug/g	5.4		---		---	---	---	
Al	ug/mL	5		---		---	---	---	
B	ug/g	< 1.1		---		---	---	---	
B	ug/mL	< 1		---		---	---	---	
Ca	ug/g	9.8		---		---	---	---	
Ca	ug/mL	9		---		---	---	---	
Cr	ug/g	1.1		---		---	---	---	
Cr	ug/mL	1		---		---	---	---	
Cu	ug/g	< 1.1		---		---	---	---	
Cu	ug/mL	< 1		---		---	---	---	
Density	g/cm³	0.918		---		---	---	---	
Fe	ug/g	< 5.4		---		---	---	---	
Fe	ug/mL	< 5		---		---	---	---	
Flash Pt.	deg. C	140		---		---	---	---	
Mg	ug/g	< 1.1		---		---	---	---	
Mg	ug/mL	< 1		---		---	---	---	
Mn	ug/g	< 1.1		---		---	---	---	
Mn	ug/mL	< 1		---		---	---	---	
Mo	ug/g	< 1.1		---		---	---	---	
Mo	ug/mL	< 1		---		---	---	---	
Na	ug/g	9.8		---		---	---	---	
Na	ug/mL	9		---		---	---	---	
Ni	ug/g	1.1		---		---	---	---	
Ni	ug/mL	1		---		---	---	---	
S	ug/g	2400 ± 30		2340 ± 50	(6)	2310	2300 - 2400	2370 ± 40	(4) XRF
S	ug/g	---		---		---	---	2300	(2) COUL
Si	ug/g	< 1.1		---		---	---	---	
Si	ug/mL	< 1		---		---	---	---	
Sn	ug/g	< 1.1		---		---	---	---	
Sn	ug/mL	< 1		---		---	---	---	
Ti	ug/g	< 1.1		---		---	---	---	
Ti	ug/mL	< 1		---		---	---	---	
V	ug/g	3.3		---		---	---	---	
V	ug/mL	3		---		---	---	---	
Zn	ug/g	16.3		---		---	---	---	
Zn	ug/mL	15		---		---	---	---	

TABLE 1623-2: INDIVIDUAL DATA FOR NBS SRM 1623  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (ug/g)</u>				
2600	200		MECA	80MCC 01
2650	40		IC	80MCC 01
2700			XRF	80MCC 01
2900	500		TITR	80MCC 01

TABLE 1623A-2: INDIVIDUAL DATA FOR NBS SRM 1623A  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (ug/g)</u>				
2300			COUL	84TAK 01
2300			COUL	83TAK 01
2310	240	32	EXRF	83SAN 02
2380			XRF	84TAK 01
2380			XRF	83TAK 01
2400	50	32	EXRF	83SAN 02

TABLE 1624-1: COMPILED DATA FOR NBS SRM 1624 SULFUR IN DISTILLATE OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	METHOD MEANS	
		Mean ± SD	Mean ± SD (n)			Mean (n) Method	
S	ug/g	2110 ± 40	2050 ± 120 (4)	2030	1900 - 2200	1900 (1) ICPES	
S	ug/g	---	---	---	---	2200 (1) POL	
S	ug/g	---	---	---	---	2030 (1) TITR	
S	ug/g	---	---	---	---	2080 (1) IC	

TABLE 1624A-1: COMPILED DATA FOR NBS SRM 1624A SULFUR IN DISTILLATE OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	METHOD MEANS	
		Mean ± SD	Mean ± SD (n)			Mean ± SD (n) Method	
Al	ug/g	1.2	---	---	---	---	
Al	ug/mL	1	---	---	---	---	
B	ug/g	< 1.2	---	---	---	---	
B	ug/mL	< 1	---	---	---	---	
Ca	ug/g	8.2	---	---	---	---	
Ca	ug/mL	7	---	---	---	---	
Cr	ug/g	< 1.2	---	---	---	---	
Cr	ug/mL	< 1	---	---	---	---	
Cu	ug/g	< 1.2	---	---	---	---	
Cu	ug/mL	< 1	---	---	---	---	
Density	g/cm³	0.848	---	---	---	---	
Fe	ug/g	< 5.9	---	---	---	---	
Fe	ug/mL	< 5	---	---	---	---	
Mg	ug/g	< 1.2	---	---	---	---	
Mg	ug/mL	< 1	---	---	---	---	
Mn	ug/g	< 1.2	---	---	---	---	
Mn	ug/mL	< 1	---	---	---	---	
Mo	ug/g	< 1.2	---	---	---	---	
Mo	ug/mL	< 1	---	---	---	---	
Na	ug/g	< 1.2	---	---	---	---	
Na	ug/mL	< 1	---	---	---	---	
Ni	ug/g	< 1.2	---	---	---	---	
Ni	ug/mL	< 1	---	---	---	---	
S	ug/g	1410 ± 20	1420 ± 20 (5)	1420	1400 - 1450	1440 ± 20 (3) XRF	
S	ug/g	---	---	---	---	1400 (2) COUL	
Si	ug/g	< 1.2	---	---	---	---	
Si	ug/mL	< 1	---	---	---	---	
Sn	ug/g	< 1.2	---	---	---	---	
Sn	ug/mL	< 1	---	---	---	---	
Ti	ug/g	< 1.2	---	---	---	---	
Ti	ug/mL	< 1	---	---	---	---	
V	ug/g	< 1.2	---	---	---	---	
V	ug/mL	< 1	---	---	---	---	
Zn	ug/g	< 1.2	---	---	---	---	
Zn	ug/mL	< 1	---	---	---	---	

TABLE 1624-2: INDIVIDUAL DATA FOR NBS SRM 1624  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (ug/g)</u>				
1900	100		ICPES	81WAL 02
2030	50		TITR	82VIS 01
2080	210		IC	82VIS 01
2200	200		POL	81REL 01

TABLE 1624A-2: INDIVIDUAL DATA FOR NBS SRM 1624A  
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (ug/g)</u>				
1400			COUL	84TAK 01
1400			COUL	83TAK 01
1420	90	32	EXRF	83SAN 02
1450			XRF	83TAK 01
1450			XRF	84TAK 01
1540	280	32	EXRF	83SAN 02

TABLE 1630-1: COMPILED DATA FOR NBS SRM 1630 MERCURY IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	(n)	Mean ± SD	(n)			Mean ± SD	(n)	Method
ASH	%	---		2.2	(1)	---	---	2.2	(1)	CB
Al	ug/g	---		5300	(1)	---	---	---		
As	ug/g	---		19	(1)	---	---	---		
B	ug/g	---		5	(1)	---	---	---		
Be	ug/g	---		1	(1)	---	---	---		
Br	ug/g	---		33	(2)	---	29 - 37	37	(1)	NAA
Ca	ug/g	---		700	(1)	---	---	---		
Cd	ng/g	---		< 200		---	---	---		
Cl	ug/g	---		1725	(2)	---	1230 - 2220	1230	(1)	IC
Co	ug/g	---		4.8	(2)	---	3.6 - 6	3.6	(1)	NAA
Cr	ug/g	---		7.55	(2)	---	7.1 - 8	7.1	(1)	NAA
Cu	ug/g	---		16	(1)	---	---	---		
F	ug/g	---		25	(1)	---	---	---		
Fe	%	---		0.77	(2)	---	0.51 - 1.04	0.51	(1)	NAA
Ga	ug/g	---		1.08	(2)	---	1.07 - 1.1	1.07	(1)	NAA
Ge	ug/g	---		1	(1)	---	---	---		
H2O-	%	---		0.4	(1)	---	---	0.4	(1)	GRAV
Hg	ng/g	130 ± 10		126 ± 13	(20)	127	104 - 150	122 ± 13	(9)	NAA
Hg	ng/g	---		---		---	---	135	(1)	OES
Hg	ng/g	---		---		---	---	118	(1)	FAE
Hg	ng/g	---		---		---	---	130 ± 14	(8)	AA
K	ug/g	---		800	(1)	---	---	---		
La	ug/g	---		4.4	(1)	---	---	4.4	(1)	NAA
Mg	ug/g	---		200	(1)	---	---	---		
Mn	ug/g	---		6	(1)	---	---	---		
Mo	ug/g	---		2	(1)	---	---	---		
Na	ug/g	---		405	(2)	---	320 - 490	490	(1)	NAA
Ni	ug/g	---		10	(1)	---	---	---		
P	ug/g	---		17	(1)	---	---	---		
Pb	ug/g	---		4	(1)	---	---	---		
S	%	---	1.14 ± 0.20	(3)		1.07	0.99 - 1.37	1.37	(1)	XRF
S	%	---	---			---	---	0.99	(1)	IC
S	%	---	---			---	---	1.07	(1)	CB
Sb	ug/g	---	1.15	(2)		---	0.6 - 1.7	1.7	(1)	NAA
Sc	ug/g	---	1.4	(1)		---	---	1.4	(1)	NAA
Se	ug/g	2.1	2.2 ± 0.2	(6)		2.11	2.0 - 2.6	2.23 ± 0.25	(4)	NAA
Se	ug/g	---	---			---	---	2.12	(1)	ICPES
Si	ug/g	---	7200	(1)		---	---	---		
Sn	ug/g	---	6	(1)		---	---	---		
Ti	ug/g	---	500	(1)		---	---	---		
V	ug/g	---	24	(1)		---	---	---		
Zn	ug/g	---	6	(1)		---	---	---		
Zr	ug/g	---	21	(1)		---	---	---		

TABLE 1630-2: INDIVIDUAL DATA FOR NBS SRM 1630 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (ug/g)</u>									
5300		VV		77GLU 01	25		VV		77GLU 01
<u>As (ug/g)</u>									
19		VV		77GLU 01	0.51	0.0204	ITNA		74TAM 01
<u>ASH (%)</u>									
2.2		CB		77GLU 01	1.04		VV		77GLU 01
<u>B (ug/g)</u>									
5		VV		77GLU 01	1.07	0.04	RTNA		72SAN 01
<u>Be (ug/g)</u>									
1		VV		77GLU 01	1.1		VV		77GLU 01
<u>Br (ug/g)</u>									
29		VV		77GLU 01	1		VV		77GLU 01
37		ITNA		74TAM 01	<u>H2O- (%)</u>				
<u>Ca (ug/g)</u>									
700		VV		77GLU 01	0.4		GRAY		77GLU 01
<u>Cd (ug/g)</u>									
<	0.2	L	VV	77GLU 01	104	6	CVAA		80NAD 01
<u>Cl (ug/g)</u>									
1230	40	IC		85GEN 01	105		RTNA		74RIC 01
2220		VV		77GLU 01	105	30	RTNA		72LYO 01
<u>Co (ug/g)</u>									
3.6	0.18	ITNA		74TAM 01	106		ITNA		74RIC 01
6		VV		77GLU 01	118	11	FAE		76CAV 01
<u>Cr (ug/g)</u>									
7.1	0.35	ITNA		74TAM 01	120	10	CVAA		73LO 01
8		VV		77GLU 01	124	11	CVAA		82DOO 01
<u>Cu (ug/g)</u>									
16		VV		77GLU 01	125	10	CVAA		75WIM 01
<u>K (ug/g)</u>									
800					127	5	RTNA		74ORV 01
<u>La (ug/g)</u>									
4.4					127	6	RTNA		72RAI 01
<u>Li (ug/g)</u>									
16					127	12	RTNA		72ROO 01
<u>Mg (ug/g)</u>									
1230	40	IC		85GEN 01	130	10	RTNA		75LIT 01
2220		VV		77GLU 01	130	10	ITNA		74TAM 01
<u>Na (ug/g)</u>									
135					135		OES		75PEC 01
<u>Ni (ug/g)</u>									
136	0.18	ITNA		74TAM 01	136	7	FAA		82UCH 02
6		VV		77GLU 01	139	7	CVAA		72RAI 01
<u>Pb (ug/g)</u>									
139					139	12	FAA		72ROO 01
<u>Sc (ug/g)</u>									
140					140		RTNA		75FRO 01
<u>Sr (ug/g)</u>									
140					140		VV		77GLU 01
<u>Ta (ug/g)</u>									
150					150		CVAA		75MUR 01
486					486	60	ITNA		75LIT 01
<u>Ti (ug/g)</u>									
7.1	0.35	ITNA		74TAM 01	486				
8		VV		77GLU 01	<u>Y (ug/g)</u>				
800					486		VV		77GLU 01
<u>Zn (ug/g)</u>									
16		VV		77GLU 01	486		ITNA		74TAM 01
<u>Zr (ug/g)</u>									
4.4					486				

TABLE 1630-2: INDIVIDUAL DATA FOR NBS SRM 1630 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference					
<u>Mg (ug/g)</u>														
200		VV		77GLU 01	0.6		VV		77GLU 01					
<u>Mn (ug/g)</u>														
6		VV		77GLU 01	1.7	0.51	ITNA		74TAM 01					
<u>Mo (ug/g)</u>														
2		VV		77GLU 01	1.4	0.06	ITNA		74TAM 01					
<u>Na (ug/g)</u>														
320		VV		77GLU 01	2		VV		77GLU 01					
490		ITNA		74TAM 01	2.09	0.06	RTNA		74ORV 01					
<u>Ni (ug/g)</u>														
10		VV		77GLU 01	2.11	0.09	RTNA		72ROO 03					
<u>P (ug/g)</u>														
17		VV		77GLU 01	2.11	0.09	RTNA		77ROO 02					
<u>Pb (ug/g)</u>														
4		VV		77GLU 01	2.12	0.09	ICPES		80HAA 01					
<u>S (%)</u>														
0.99	0.05	IC		85GEN 01	2.6	0.21	ITNA		74TAM 01					
1.07		CB		77GLU 01										
1.37		XRF		77GLU 01										
<u>Sb (ug/g)</u>														
<u>Sc (ug/g)</u>														
<u>Se (ug/g)</u>														
<u>Si (ug/g)</u>														
<u>Sn (ug/g)</u>														
<u>Ti (ug/g)</u>														
<u>V (ug/g)</u>														
<u>Zn (ug/g)</u>														
<u>Zr (ug/g)</u>														

TABLE 1631A-1: COMPILED DATA FOR NBS SRM 1631A SULFUR IN COAL  
(revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS			MEDIAN	RANGE	METHOD MEANS			
		Mean	± SD	Mean	± SD	(n)			Mean	± SD	(n)	Method
ASH	%	5.00	± 0.02	---	---	---	---	---	---	---	---	
H <sub>2</sub> O	%	0.84	---	---	---	---	---	---	---	---	---	
Hg	ng/g	73	---	---	---	---	---	---	---	---	---	
Pb	ug/g	5.44	---	---	---	---	---	---	---	---	---	
S	ug/g	5460	± 30	5570	± 250	(8)	5460	5260 - 5990	5900	(1)	TCGS	
S	ug/g	---	---	---	---	---	---	---	5375	(2)	TITR	
S	ug/g	---	---	---	---	---	---	---	5460	(1)	IC	
S	ug/g	---	---	---	---	---	---	---	5610	± 260	(4)	CB

TABLE 1631B-1: COMPILED DATA FOR NBS SRM 1631B SULFUR IN COAL  
(revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS			MEDIAN	RANGE	METHOD MEANS		
		Mean	± SD	Mean	± SD	(n)			Mean	± SD	(n)
ASH	%	14.59	± 0.09	---	---	---	---	---	---	---	---
H <sub>2</sub> O	%	0.69	---	---	---	---	---	---	---	---	---
Hg	ng/g	41	---	---	---	---	---	---	---	---	---
Pb	ug/g	5.97	---	---	---	---	---	---	---	---	---
S	%	2.016	± 0.014	2.01	± 0.08	(6)	1.97	1.92 - 2.14	2.02	(1)	TCGS
S	%	---	---	---	---	---	---	---	1.98	(2)	TITR
S	%	---	---	---	---	---	---	---	1.97	(1)	IC
S	%	---	---	---	---	---	---	---	2.045	(2)	CB

TABLE 1631C-1: COMPILED DATA FOR NBS SRM 1631C SULFUR IN COAL  
(revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS			MEDIAN	RANGE	METHOD MEANS			
		Mean	± SD	Mean	± SD	(n)			Mean	± SD	(n)	Method
ASH	%	6.17	± 0.02	---	---	---	---	---	---	---	---	
H <sub>2</sub> O	%	0.47	---	---	---	---	---	---	---	---	---	
S	%	3.02	± 0.008	3.03	± 0.06	(7)	3.00	2.97 - 3.117	2.98	(1)	TCGS	
S	%	---	---	---	---	---	---	---	3.05	(2)	TITR	
S	%	---	---	---	---	---	---	---	3.09	(1)	IC	
S	%	---	---	---	---	---	---	---	3.00	± 0.04	(3)	CB

TABLE 1631A-2: INDIVIDUAL DATA FOR NBS SRM 1631A  
 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (ug/g)</u>				
5260	350		TITR	80ARO 01
5420	60		CB	86GAU 01
5450	80		CB	84LEC 02
5460			IC	77SMI 05
5490			TITR	74HIC 01
5590	50		CB	84GLA 11
5900	400		TCGS	77JUR 01
5990	20		CB	85GLA 03

TABLE 1631B-2: INDIVIDUAL DATA FOR NBS SRM 1631B  
 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (%)</u>				
1.92			TITR	74HIC 01
1.95	0.07		CB	85GLA 03
1.97			IC	77SMI 05
2.02	0.05		TCGS	77JUR 01
2.042	0.067		TITR	80ARO 01
2.14	0.09		CB	86GAU 01

TABLE 1631C-2: INDIVIDUAL DATA FOR NBS SRM 1631C  
 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>S (%)</u>				
2.97			CB	82ANO 01
2.98	0.02		TCGS	77JUR 01
2.99			TITR	74HIC 01
3	0.05		CB	85GLA 03
3.04	0.03		CB	86GAU 01
3.09			IC	77SMI 05
3.117	0.097		TITR	80ARO 01

TABLE 1632-1: COMPILED DATA FOR NBS SRM 1632 TRACE ELEMENTS IN COAL (revised 3/1/86)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS		
										Mean ± SD	(n)	Method
ASH	%	---	12.7 (2)	---	12.17 - 13.2	---	---	---	---	12.68	(2)	CB
Ag	ng/g	< 100	63 ± 13 (5)	60	45 - 80	80 (1)	55 ± 9 (3)	---	---	70	(1)	SSMS
Al	%	1.73 ± 0.10 (32)	1.72	1.57 - 1.9	1.71 (2)	1.74 ± 0.10 (21)	1.70 ± 0.09 (8)	5.9 (2)	5.8 ± 1.0 (3)	1.68	(1)	TGCS
As	ug/g	5.9 ± 0.6	5.8 ± 0.5 (52)	5.8	4.61 - 7	5.64 ± 0.06 (5)	5.9 ± 0.4 (29)	5.9 (2)	5.8 ± 1.0 (3)	6.0 ± 0.3 (6)	PAA	5 (1) QES
As	ug/g	---	---	---	---	---	---	---	---	---	---	GCMES
As	ug/g	---	---	---	---	---	---	---	---	5.4	(1)	COLOR
Au	ng/g	---	0.92 (2)	---	0.85 - 0.99	---	0.92 (2)	---	---	46.1 ± 2.7 (4)	TGCS	30 (1) QES
B	ug/g	---	41 ± 8 (7)	43	29 - 47.7	---	29 (1)	29	---	314	(2)	PAA
Ba	ug/g	---	326 ± 32 (33)	314	256 - 390	---	332 ± 31 (27)	240 ± 70 (5)	301 (1)	1.2	(1)	OES
Be	ug/g	1.5	1.62 ± 0.10 (13)	1.63	1.49 - 1.85	1.60 ± 0.08 (9)	1.7 (1)	1.77 ± 0.08 (3)	---	1.49	(1)	FLUOR
Bi	ug/g	---	1.05 (1)	---	---	---	---	---	---	1.05	(1)	PAA
Br	ug/g	---	17.7 ± 1.7 (32)	18	14 - 20	---	17.6 ± 1.8 (28)	---	19.0 ± 2.7 (5)	---	---	---
C	%	70.6 ± 1.7 (5)	70	68.93 - 73	---	---	---	---	70.1 ± 1.4 (3)	CB	71.5 (2)	TGCS
Ca	ug/g	4180 ± 420 (30)	4200	3300 - 5100	4950 (1)	4040 ± 320 (14)	4150 ± 230 (7)	4310 (2)	4450	(2)	PAA	5100 (1) OES
Ca	ug/g	---	---	---	---	---	---	---	---	2840	(1)	GAMMA
Cd	ug/g	---	209 ± 26 (26)	200	170 - 250	222 ± 26 (10)	220 ± 17 (3)	---	3300	(1)	TGCS	4030 (1) 14NAA
Cd	ng/g	190 ± 30	---	---	---	---	---	---	205 ± 23 (6)	PAA	310 (1) IDMS	
Cd	ng/g	---	---	---	---	---	---	---	190	(1)	POL	190 (2) TGCS
Cd	ng/g	---	---	---	---	---	---	---	200	(2)	SSMS	180 (2) AF
Ce	ug/g	---	20.7 ± 1.9 (26)	20.4	17.34 - 26	---	20.4 ± 1.8 (22)	22.8 (1)	24	(1)	PAA	26.5 (2) OES
Cl	ug/g	876 ± 64 (31)	880	750 - 1000	---	874 ± 71 (22)	---	810 (2)	910	(2)	PAA	882 (2) IC
Co	ug/g	6	5.6 ± 0.6 (43)	5.7	3.9 - 7	6.1 ± 0.8 (3)	5.8 ± 0.5 (30)	5.0 ± 0.8 (6)	6.75	(2)	PAA	4.7 (1) OES
Cr	ug/g	20.2 ± 0.5	19.6 ± 1.5 (47)	19.6	16 - 23	19.7 ± 0.4 (8)	19.7 ± 1.3 (28)	17 ± 2 (6)	20	(2)	PAA	16 (1) OES
Cr	ug/g	---	---	---	---	---	---	---	---	19	(1)	SSMS
Cs	ug/g	---	1.50 ± 0.18 (24)	1.46	1.3 - 2.3	---	1.52 ± 0.18 (22)	---	1.4	(1)	PAA	---
Cu	ug/g	18 ± 2	17.4 ± 2.2 (33)	17.4	13 - 23	18.2 ± 1.6 (9)	15.8 ± 1.5 (6)	17.6 ± 1.4 (6)	18 ± 4	(8)	16.7 ± 1.7 (3)	SSMS
Cu	ug/g	---	---	---	---	---	---	---	---	---	---	17 (1) OES
Dy	ug/g	---	1.23 ± 0.2 (12)	1.2	0.85 - 1.59	1.3 (1)	1.2 ± 0.2 (11)	---	---	---	---	---
Er	ug/g	5	0.7 (2)	---	0.7 - 9.3	0.7 (1)	9.3 (1)	---	---	---	---	---
Eu	ng/g	360 ± 40 (26)	350	280 - 420	400 (1)	350 ± 40 (23)	420 (1)	410 (1)	410	(1)	OES	---
F	ug/g	80 ± 10 (8)	80	65 - 91	---	---	---	---	81 ± 11 (6)	ISE	71 (1)	IC

TABLE 1632-1: COMPILED DATA FOR NBS SRM 1632 TRACE ELEMENTS IN COAL (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN		RANGE		AA		NAA		ICPES		XRF		OTHER METHODS		Mean (n)	Method
			Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n		
Fe	ug/g	8700 ± 300	8510 ± 440	(47)	8440	7517 - 9300	8700 ± 370	(4)	8560 ± 470	(27)	8300 ± 400	(8)	7900 ± 700	(6)	8695	(2)	PAA	8600	(1) POL	
Fe	ug/g	---	---	---	---	---	---	---	5.5 ± 0.8	(13)	---	---	7.1 ± 1.3	(4)	6.2	(1)	TGCS	---	---	
Ca	ug/g	---	5.9 ± 1.1	(18)	5.8	4.5 - 8.5	---	---	5.2 ± 0.5	(5)	1.2	(1)	1.3	(1)	1.82	(2)	TGCS	---	---	
Cd	ug/g	---	2.5 ± 0.9	(10)	2.5	1.2 - 3.62	1.2	(1)	3.2 ± 0.5	2	2.3	(1)	3.6 ± 1.2	(3)	2.7	(1)	OES	---	---	
Ge	ug/g	---	2.6 ± 0.4	(6)	2.7	2 - 3	---	---	---	---	---	---	4.42	(2)	CB	4.16	(2) TCGS	---	---	
H	%	---	4.29 ± 0.22	(4)	4.28	4.02 - 4.57	---	---	---	---	---	---	2.6	(1)	FD	---	---	---	---	
H2O-	%	---	2.6	(1)	---	---	---	---	0.98 ± 0.10	(21)	0.98 ± 0.10	(21)	---	---	---	---	---	---	---	
Hf	ug/g	---	0.98 ± 0.10	(21)	0.96	0.81 - 1.15	---	---	118 ± 14	(8)	150 ± 50	(13)	---	---	100	(3)	PAA	---	---	
Hg	ng/g	120 ± 20	118 ± 24	(22)	117	70 - 180	240 - 270	250	252 ± 15	(4)	252 ± 15	(4)	---	---	---	---	---	---	---	
Ho	ng/g	---	252 ± 13	(5)	250	240 - 270	250	(1)	252 ± 15	(4)	---	---	3	(1)	3.3	(2)	PAA	---	---	
I	ug/g	---	3.2 ± 0.4	(12)	3.3	2.68 - 4	---	---	3.4 ± 1.1	(10)	---	---	---	---	---	---	---	---	---	
In	ng/g	---	35 ± 21	(7)	30	16.9 - 70	---	---	35 ± 21	(7)	---	---	---	---	---	---	---	---	---	
Ir	ng/g	---	2.8 ± 0.6	(3)	2.5	2.48 - 3.53	---	---	2.8 ± 0.6	(3)	2.8 ± 0.6	(3)	---	---	---	---	---	---	---	
K	ug/g	---	2780 ± 170	(39)	2800	2410 - 3100	2570	(1)	2830 ± 130	(25)	2675 ± 190	(8)	2410	(1)	2700	(1)	PAA	3100	(1) OES	
La	ug/g	---	10.6 ± 0.7	(31)	10.6	9.1 - 11.5	10	(1)	10.6 ± 0.6	(26)	10.35	(2)	10	(1)	11	(1)	OES	2840	(1) GAMMA	
Li	ug/g	---	25.9 ± 2.5	(3)	25	24 - 28.7	25	(1)	134 ± 12	(13)	28.7	(1)	---	---	24	(1)	OES	43.5	(1) TGCS	
Lu	ng/g	---	129 ± 16	(15)	130	100 - 150	100	(1)	1760 ± 490	(16)	1260 ± 180	(8)	---	---	---	---	---	---	---	
Hg	ug/g	---	1560 ± 410	(26)	1600	980 - 2480	---	---	41.8 ± 2.2	(29)	41.8 ± 2.9	(6)	37.8 ± 1.1	(5)	45.0	(2)	PAA	1600	(1) OES	
Mn	ug/g	40 ± 3	41.1 ± 2.6	(50)	41.1	36 - 46	40 ± 3	(7)	41.8 ± 2.2	(29)	41.8 ± 2.9	(6)	37.8 ± 1.1	(5)	45.0	(2)	PAA	36	(1) OES	
Nb	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
No	ug/g	---	3.8 ± 0.8	(10)	3.4	3.08 - 5	---	3.8 ± 0.9	(6)	4	(2)	4	(1)	0.26 ± 0.05	(5)	PAA	3.6	(1) OES		
N	%	---	1.20 ± 0.14	(4)	1.2	1.01 - 1.3	---	---	---	---	---	---	1.3	(1)	CB	1.25	(2) TGCS	---	---	
N	%	---	---	---	---	---	---	---	---	---	---	---	1.01	(1)	IC	---	---	---	---	
Na	ug/g	---	379 ± 29	(39)	380	325 - 439	480	(1)	384 ± 24	(27)	374 ± 41	(8)	390	(1)	350	(2)	PAA	---	---	
Nb	ug/g	5	(1)	---	---	---	---	---	9.1 ± 1.6	(5)	9.5	(1)	5	(1)	---	---	---	---	---	
Nd	ug/g	9.0 ± 1.6	(9)	9.5	6.4 - 11.3	8	(1)	16 ± 3	(15)	15.2 ± 2.5	(6)	14.2 ± 2.4	(6)	13.9 ± 0.2	(5)	PAA	---	---		
Ni	ug/g	15 ± 1	15 ± 2	(41)	14.8	11 - 19	14.6 ± 1.5	(6)	16 ± 3	(15)	15.2 ± 2.5	(6)	14.2 ± 2.4	(6)	14.73 ± 0.06	(3)	IDMS	15	(1) OES	
Ni	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
O	%	12.6	(2)	---	---	10.08 - 15.05	---	---	---	---	---	---	15.2	(2)	SSMS	14.8	(1) POL	10.08	(1) CALC	
Os	ug/g	< 1	---	---	---	---	---	---	---	---	---	---	15.05	(1)	14NAA	15	(1) OES	---	---	

TABLE 1632-1: COMPILED DATA FOR NBS SRM 1632 TRACE ELEMENTS IN COAL (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS		
										Mean ± SD (n)	SD (n)	Mean (n)
P	ug/g	---	140 ± 40 (10)	137	92 - 250	---	---	125 ± 24 (7)	138 (1)	260 (2)	COLOR	---
Pb	ug/g	30 ± 9	28 ± 4 (34)	28	19.1 - 36	29 ± 3 (11)	---	24 ± 8 (6)	24 ± 8 (5)	30 ± 2 (7)	PAA	28.7 (2) IDMS
Pb	ug/g	---	< 5	---	---	---	---	---	---	30 ± 3 (3)	SSMS	28.4 (1) POL
Pd	ng/g	---	3.8 ± 1.3 (4)	3.6	2 - 4.9	---	4.4 ± 0.7 (3)	---	2 (1)	---	---	---
Pr	ug/g	---	228 (2)	---	186 - 270	---	228 (2)	---	---	---	---	---
Pt	ng/g	---	20.5 ± 2.2 (30)	20	16.3 - 24.7	---	20.5 ± 2.3 (23)	---	20 ± 3 (4)	20 (2)	PAA	22 (1) OES
Rb	ug/g	---	< 5	---	---	---	---	---	---	< 5	---	---
Rh	ug/g	---	18 (1)	---	---	---	18 (1)	---	---	---	---	---
RU	ng/g	---	1.32 ± 0.08 (11)	1.32	1.22 - 1.52	---	---	0.9 (1)	1.35 ± 0.12 (4)	1.30 (2)	TCGS	---
S	%	---	3.4 ± 0.6 (37)	3.4	2.2 - 4.45	3.3 ± 1.3 (3)	3.4 ± 0.5 (29)	---	---	1.22 ± 0.21 (4)	CB	1.26 (2) IC
Sb	ug/g	---	3.8 ± 0.2 (30)	3.8	3.4 - 4.2	---	3.8 ± 0.2 (24)	3.8 (2)	3 (1)	3.6 ± 0.5 (3)	PAA	2.3 (1) COLOR
Sc	ug/g	2.9 ± 0.3	3.0 ± 0.4 (50)	3	2.3 - 3.9	2.3 (2)	3.1 ± 0.4 (32)	2.9 (1)	4.1 (1)	3.59 (2)	PAA	3.6 (1) OES
Se	ug/g	---	---	---	---	---	---	---	3.02 ± 0.10 (4)	3.01 ± 0.01 (5)	PAA	3 (1) OES
Se	ug/g	---	---	---	---	---	---	---	---	---	2.86 (1) DCPES	---
Se	ug/g	---	3.08 ± 0.24 (12)	3.14	2.6 - 3.5	2.9 (2)	3.12 (1)	3.08 ± 0.22 (5)	3.19 (1)	3.05 (1)	ASV	2.86 (2) GCMS
Si	%	---	---	---	---	---	---	---	---	2.75 (2)	SSMS	4.7 (1) COLOR
Si	%	---	1.6 ± 0.2 (26)	1.66	1.3 - 1.93	1.4 (1)	1.64 ± 0.18 (23)	1.3 (1)	---	3.00 (1)	PAA	3.5 (1) 14AA
Sm	ug/g	---	9.3 ± 1.8 (9)	10	5 - 11	---	---	---	---	1.53 (1)	TCGS	---
Sn	ug/g	---	150 ± 20 (34)	150	99 - 190	99 (1)	146 ± 28 (26)	7.2 ± 2.9 (3)	5 (1)	10.2 ± 0.4 (5)	PAA	---
Sr	ug/g	---	250 ± 40 (18)	240	170 - 350	---	250 ± 40 (18)	139 ± 3 (3)	146 ± 10 (6)	140 (1)	PAA	---
Ta	ng/g	---	280 ± 70 (12)	260	200 - 400	---	280 ± 70 (12)	---	---	---	---	---
Tb	ng/g	< 100	710 ± 280 (3)	600	500 - 1020	500 (1)	600 (1)	---	---	1020 (1)	PAA	---
Te	ng/g	3	3.16 ± 0.23 (24)	3.2	2.7 - 3.65	---	3.16 ± 0.21 (20)	---	2.85 (2)	3.45 (2)	GAMMA	---
Th	ug/g	800	940 ± 120 (39)	946	680 - 1200	840 ± 170 (3)	990 ± 115 (19)	920 ± 60 (7)	1000 ± 240 (5)	920 ± 45 (3)	PAA	900 (1) OES
Ti	ug/g	---	---	---	---	---	---	---	---	890 (1)	TCGS	790 (1) POL
Tl	ng/g	590 ± 30	550 ± 50 (8)	520	500 - 610	---	---	---	---	550 ± 40 (5)	PAA	600 ± 10 (3) SSMS
Tm	ng/g	---	300 ± 1 (4)	300	300 - 300	---	300 ± 1 (4)	---	---	---	---	---
U	ug/g	1.4 ± 0.1	1.37 ± 0.13 (32)	1.4	1.1 - 1.6	---	1.37 ± 0.14 (23)	---	2 (1)	1.42 ± 0.13 (5)	PAA	1.2 (2) IDMS
U	ug/g	---	---	---	---	---	---	---	---	---	---	---
V	ug/g	35 ± 3	34 ± 2 (41)	34	30 - 40	35 ± 2 (7)	34.5 ± 2.2 (23)	33.8 ± 2.3 (6)	35 (2)	34 (2)	PAA	1.41 (2) GAMMA
W	ng/g	---	740 ± 65 (11)	740	630 - 870	---	740 ± 60 (11)	---	---	---	---	---
Y	ug/g	---	7.5 ± 0.6 (8)	7.4	6.6 - 8.3	7 (1)	7.45 (2)	7.4 ± 0.4 (3)	7.8 (2)	OES	---	
Yb	ng/g	---	790 ± 130 (23)	790	550 - 1030	700 (1)	800 ± 130 (20)	670 (1)	910 (1)	OES	---	
Zn	ug/g	37 ± 4	37 ± 3 (52)	37	30 - 45	37.3 ± 1.8 (9)	36 ± 3 (20)	38.8 ± 1.6 (5)	35.8 ± 2.3 (8)	37.6 ± 1.2 (6)	PAA	45 (1) OES
Zn	ug/g	---	---	---	---	---	---	---	35 (2)	SSMS	38.1 (1) AF	
Zr	ug/g	34 ± 10	33 (10)	33	16 - 46	46 (1)	38 ± 7 (4)	25 (1)	36 (2)	16 (1)	PAA	25 (1) OES

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>										
<	100		ITNA	75RUC 01		1.98	0.1		XRF	79PRA 01
<	140	L	ITNA	77MAE 01		2.1	1.05		OES	76WEW 01
<	150	L	OES	76WEW 01		2.21			ITNA	77GLU 01
<	200	L	ITNA	77CAH 01		3	0.1		ITNA	82SUZ 02
<	200	L	ICPES	81CHU 01						
<	220	L	ITNA	82SUZ 02						
<	400	L	PAA	76CHA 01						
45	5		RTNA	77NAD 02		3	2		EXRF	73SPA 01
60	30		ITNA	75OND 01		4.5	0.4		ITNA	75RIC 01
60	30		ITNA	73ABE 01		4.6	0.3		ITNA	78NAD 02
70	34		SSMS	77PAU 01		4.61	0.32		ITNA	75NAD 02
80			AA	76WEW 01		4.7	0.5		ITNA	78MAC 01
1050	100		PAA	74CHA 01		4.7	1		EXRF	79GIA 01
						5	0.6	H	OES	80CLA 01
<u>Al (%)</u>										
						5.1	0.5		ITNA	76KUC 01
						5.31			ICPES	81NAD 01
1.51	0.08		NAA	76HAN 01		5.4	0.1		IENA	78WAN 01
1.57		4	AA	79REI 01		5.4	0.3		FAE	80DSI 01
1.57	0.155		ITNA	73SHE 01		5.4	0.5		COLOR	77ARU 01
1.59	0.2		ITNA	76RAG 01		5.5			ITNA	75KLE 01
1.6			ICPES	80NAD 01		5.58	0.73		FAA	82BEN 01
1.6	0.2	35	ITNA	81GLA 03		5.6			FAA	78GUI 01
1.62	0.13		ITNA	78MAC 01		5.6	0.2		ITNA	77ARU 01
1.64			ICPES	80NAD 01		5.6	0.36		FAA	77ARU 01
1.66			ICPES	80NAD 01		5.7			ITNA	77GLU 01
1.66	0.08		ICPES	84NAD 01		5.7			FAA	75POL 01
1.67	0.01	11	ICPES	85HAR 01		5.7			ITNA	78WEA 01
1.68	0.01		ITNA	83NDI 01		5.7	0.13		RTNA	75RUC 01
1.68	0.04	D	TCGS	80AND 01		5.7	0.2	H	FAE	79FEL 01
1.68	0.04		TCGS	79FAI 01		5.7	0.2		FAA	78HAY 01
1.69		11	ICPES	85HAR 01		5.7	0.5		ITNA	79FRU 01
1.71	0.05		ITNA	77MAE 01		5.7	0.5		ITNA	73ABE 01
1.71	0.07		ITNA	78LAU 02		5.75	0.37		PAA	74CHA 01
1.72	0.09		ITNA	75RIC 01		5.8	0.3		PAA	76CHA 01
1.73	0.04		ITNA	76BLO 01		5.8	0.3		ITNA	76RAG 01
1.74	0.04		ITNA	77ROW 03		5.8	0.3		ITNA	77MAE 01
1.74	0.04	D	NAA	79STE 01		5.8	0.3		PAA	77JER 01
1.74	0.4		ITNA	76STE 05		5.8	0.4		RTNA	74ORV 01
1.76	0.31		ITNA	78NAD 02		5.8	0.5		ITNA	76BLO 01
1.76	0.31		ITNA	75NAD 02		5.9	0.3		ITNA	79GRE 01
1.78	0.08		ITNA	73ABE 01		5.9	0.4		ITNA	81WAN 01
1.8			ITNA	84CLE 01		5.9	0.5		ITNA	73SHE 01
1.8	0.18		ITNA	76WEW 01		6.0	0.3		ITNA	78LAU 02
1.82	0.06		ICPES	81CHU 01		6.1	0.3		GCMES	75TAL 01
1.85			ITNA	78WEA 01		6.1	0.4		ITNA	77ROW 04
1.85	0.08		ITNA	79GRE 01		6.1	0.5		XRF	79FRU 01
1.85	0.13		ITNA	75OND 01		6.1	0.55		ITNA	77JER 01
1.85	0.13		FAA	77PIL 01		6.1	1.4		ITNA	75OND 01
1.86			ICPES	80NAD 01		6.2	0.8	6	PAA	82SEG 01
1.9			ITNA	75KLE 01		6.2	1.3		ITNA	77CAH 01
1.9	0.19		ITNA	81WAN 01		6.27	0.89		RTNA	77JER 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>As (ug/g) cont.</u>						<u>Ba (ug/g)</u>				
6.3	0.2		IENA	77ROW 04		87	5	9	ITNA	82SUZ 02
6.3	0.2	D	NAA	79STE 01		104	5	9	ITNA	82SUZ 02
6.3	0.3		ITNA	85FIL 01		152	37		ICPES	84NAD 01
6.3	1	6	PAA	82SEG 01		183			ICPES	80NAD 01
6.3	1		PAA	80SEG 01		256			ICPES	80NAD 01
6.4	0.2		IENA	77ROW 03		274	31		ITNA	76STE 05
6.5	0.3		NAA	76HAN 01		280			ITNA	75MIL 01
6.5	0.5		ICPES	80HAA 01		300	60		ITNA	78LAU 02
6.5	1.2		IENA	76STE 05		301		34	WXRF	82MIL 01
6.5	1.4	D	NAA	74OND 01		302	8		ITNA	76RAG 01
6.6		34	WXRF	82MIL 01		306	20		IENA	77ROW 04
6.6	1.3		ITNA	76WEW 01		306	20	D	NAA	79STE 01
7			AA	76WEW 01		309	24		ITNA	77ROW 04
8	2		PAA	75OND 01		310		11	ICPES	85HAR 01
8.9	0.2		ITNA	82SUZ 02		310		35	ITNA	81GLA 03
8.9	0.5		ITNA	75RUC 01		310	10	11	ICPES	85HAR 01
						310	30		ITNA	78MAC 01
<u>ASH (%)</u>						311	25		ITNA	75NAD 02
						311	25		ITNA	78NAD 02
12.17			CB	79PRA 01		314	20		PAA	74CHA 01
13.2		34	CB	82MIL 01		314	43		ITNA	81WAN 01
						315	20		PAA	76CHA 01
<u>Au (ng/g)</u>						320	20		NAA	76HAN 01
						320	77		ITNA	85FIL 01
<	1	L	ITNA	77CAH 01		322	20		IENA	77ROW 03
<	20		ITNA	75RUC 01		337	42		ITNA	73SHE 01
<	30	L	ITNA	73ABE 01		338	13.8		IENA	76STE 05
<	300	L	ICPES	81CHU 01		338	14	D	NAA	79STE 01
0.85	0.03		RTNA	77NAD 02		345	70		ITNA	76WEW 01
0.99	0.16		RTNA	77NAD 01		350			ITNA	78WEA 01
146	48		ITNA	73SHE 01		350	20		ITNA	77MAE 01
200			ITNA	78WEA 01		350	30		ITNA	79GRE 01
						352	30		ITNA	75OND 01
<u>B (ug/g)</u>						354	84		ITNA	79ROS 03
						360	20	9	ITNA	78LAU 02
29			ICPES	81NAD 01		366	34		ITNA	75RUC 01
30	1.1		OES	76WEW 01		385	40		ITNA	77CAH 01
42.1	0.7		TCGS	79FAI 01		390	20		ITNA	73ABE 01
42.1	0.7	D	TCGS	80AND 01		390	40		ITNA	79FRU 01
43			VV	77GLU 01		405			ITNA	75KLE 01
47	1.6	6	TCGS	76GLA 01		410	82		OES	76WEW 01
47.7	1.6	6	TCGS	76GLA 01						
47.7	1.8	6	TCGS	76GLA 01						
118			ITNA	77GLU 01						

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Be (ug/g)</u>										
1.1	0.47		ICPES	84NAD 01		19	4		ITNA	75RIC 01
1.2	0.07		OES	76WEW 01		19.2	0.6		ITNA	77ROW 04
1.24			FAA	75POL 01		19.2	1.2		ITNA	77MAE 01
1.49	0.03		FLUOR	77WIC 01		19.3			ITNA	78WEA 01
1.5			AA	76WEW 01		19.3	1.9		ITNA	75OND 01
1.5	0.1		FAA	75OKE 01		19.5	0.3		IENA	76STE 05
1.52	0.11	6	FAA	77GLA 02		19.6	0.4	D	NAA	79STE 01
1.56	0.07	11	AA	82LIN 03		19.6	0.4	D	IENA	77ROW 04
1.57	0.12	6	FAA	77GLA 02		19.6	0.4		IENA	77ROW 03
1.63	0.05	11	AA	82LIN 03		20			ITNA	77GLU 01
1.69	0.07	11	AA	82LIN 03		20	2		ITNA	79GRE 01
1.7		4	AA	79REI 01		20	3		ITNA	73SHE 01
1.7			ITNA	77GLU 01		23.7	3.2		EXRF	73SPA 01
1.7	0.03		ICPES	81CHU 01		38	1		ITNA	82SUZ 02
1.7	0.4	35	FAA	76GLA 02						
1.77			ICPES	80NAD 01						
1.85			ICPES	80NAD 01						
<u>Bi (ug/g)</u>										
<	1	L	WXRF	82MIL 01		68.93	0.11		CB	80SCH 02
<	1	L	PAA	76CHA 01		69.6	2.1	35	CB	79GLA 04
<	1	L	AA	76WEW 01		70	5	D	TCGS	80AND 01
<	1.5	L	OES	76WEW 01		71.7			TCGS	79FAI 01
1.05			PAA	74CHA 01		73	3	35	CB	79PRA 01
									TCGS	79GLA 04
<u>Br (ug/g)</u>										
						2400	600		ITNA	82SUZ 02
						2840	80		GAMMA	75OND 01
7.8	5.8		ITNA	81WAN 01		3300	500	D	TCGS	80AND 01
14	2		ITNA	76STE 05		3300	500		TCGS	79FAI 01
14.2			ITNA	75KLE 01		3500	300	D	NAA	77STE 01
15	1		ITNA	78MAC 01		3500	300		ITNA	76STE 05
15.2	1.4		ITNA	75NAD 02		3500	2800		ITNA	77ROW 03
15.2	1.4		ITNA	78NAD 02		3600			ITNA	84CLE 01
15.6	0.4		ITNA	85GAU 04		3700	400		NAA	76HAN 01
16.2	1	5	IENA	79GLA 02		3890	40	11	ICPES	85HAR 01
16.6	0.6		NAA	76HAN 01		3940		11	ICPES	85HAR 01
17	1		ITNA	78LAU 02		4000			ICPES	80NAD 01
17	2		ITNA	79FRU 01		4030	480		14NAA	77VAN 01
17	2		ITNA	73ABE 01		4070	560		ITNA	73SHE 01
17	2		XRF	79FRU 01		4100	400		ITNA	79GRE 01
17.2			ITNA	76RAG 01		4100	500		ITNA	81WAN 01
17.4	1.1		IENA	84GLA 02		4140	140		ICPES	81CHU 01
17.5	0.3		EXRF	79GIA 01		4200			ICPES	80NAD 01
17.9	0.3	5	IENA	79GLA 02		4200	300		ITNA	77MAE 01
18		34	WXRF	82MIL 01		4200	400		PAA	76CHA 01
18	2		ITNA	76KUC 01		4200	500		XRF	79FRU 01
18.2	2.3		ITNA	75RUC 01		4200	500		ITNA	75OND 01
18.8	0.9		ITNA	83NDI 01		4200	600		ITNA	76RAG 01
18.8	2.4		ITNA	77CAH 01		4300	200		ITNA	78NAD 02
19	1		XRF	79PRA 01		4300	200		ITNA	75NAD 02
<u>Br (ug/g) cont.</u>										
<u>C (%)</u>										

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ca (ug/g) cont.</u>						<u>Ce (ug/g)</u>				
4400			ITNA	75KLE 01		17.34	0.089		ITNA	73SHE 01
4400	100		ICPES	84NAD 01		18.5			ITNA	75KLE 01
4400	900		ITNA	76WEW 01		18.8	1		ITNA	76RAG 01
4420	120		XRF	79PRA 01		19	0.7		ITNA	85FIL 01
4500			ICPES	80NAD 01		19	1		ITNA	78LAU 02
4700	600		PAA	75OND 01		19.5	0.7	D	ITNA	77ROW 04
4950	4		AA	79REI 01		19.5	0.7		ITNA	77ROW 03
5000			ICPES	80NAD 01		19.5	0.7		ITNA	77MAE 01
5100	1000		OES	76WEW 01		19.5	0.7	D	NAA	79STE 01
5300	35		ITNA	81GLA 03		19.5	1		ITNA	75OND 01
7000			ITNA	77GLU 01		19.7	0.2		ITNA	76WEW 01
						19.7	0.56		ITNA	75NAD 02
						19.7	0.6		ITNA	78NAD 02
						20			ITNA	75MIL 01
Cd (ng/g)										
170	6	7	FAA	85FUD 01		20	1.2		PAA	76CHA 01
170	36		SSMS	77PAU 01		20.1	3.7		ITNA	77CAH 01
180	10		AF	75EPS 01		20.4	0.3		ITNA	84ODD 01
180	14		AF	74RAI 01		20.6	0.2		RTNA	84ODD 01
180	20	D	TCGS	80AND 01		21	1		ITNA	79GRE 01
180	20		TCGS	79FAI 01		21.2	3.5		ITNA	81WAN 01
180	40	6	PAA	82SEG 01		21.5	1.7		NAA	76HAN 01
190			POL	74MAI 01		21.5	1.8		ITNA	83WDI 01
190	2	7	FAA	85FUD 01		22.6	2.2		IENA	77ROW 04
199	20		PAA	74CHA 01		22.8	0.5		ICPES	81CHU 01
200	20		RTNA	77JER 01		23			OES	82GUP 02
200	20		PAA	77JER 01		23.3	2.7		ITNA	75RUC 01
200	20		PAA	76CHA 01		24		34	WXRF	82MIL 01
200	50	6	TCGS	76GLA 01		26	5		ITNA	78MAC 01
200	100	6	PAA	82SEG 01		29	1	12	ITNA	82SUZ 02
210	10		FAA	77GLU 01		29	1	12	ITNA	82SUZ 02
210	20		FAA	74RAI 01		30	15		OES	76WEW 01
230	10	7	AA	73TAL 01						
230	10		FAA	74TAL 01						
230	20		RTNA	74ORV 01						
230	20		RTNA	84DEL 01		80	20		ITNA	73ABE 01
230	21	8	SSMS	80KOP 01		750	75		ITNA	73SHE 01
240	30		FAA	74TAL 01		760		35	ITNA	81GLA 03
240	30	7	AA	73TAL 01		800	50		ITNA	78MAC 01
250			FAA	78GUI 01		810		34	WXRF	82MIL 01
250			FAA	75POL 01		810	30		ITNA	82SUZ 02
250	70		PAA	80SEG 01		811	5		XRF	79PRA 01
310			IDMS	75KLE 01		817	96		ITNA	81WAN 01
310			AA	76WEW 01		828	22		ITNA	76RAG 01
400	200		SSMS	77DON 01		844	37		ITNA	77ROW 03
700	350		OES	76WEW 01		844	37		ITNA	76STE 05
						844	37	D	NAA	79STE 01
						846	44		ITNA	75RUC 01
						850	40		IC	85GEN 01
						850	150		ITNA	79FRU 01
						860	54		ITNA	77CAH 01
						866	40		ITNA	75RIC 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Cl (ug/g) cont.</u>					<u>Co (ug/g) cont.</u>				
880			ITNA	84GLA 02	5.8	0.6		ITNA	85FIL 01
890			ITNA	78WEA 01	5.9			ITNA	75KLE 01
890	50		ITNA	79GRE 01	5.9	0.5		AA	79ROS 03
890	100		PAA	76CHA 01	6	0.02		ITNA	78MAC 01
890	125		ITNA	75OND 01	6	0.2		ITNA	79GRE 01
895	15	D	TCGS	80AND 01	6.01	0.16		ITNA	77ROW 04
895	15		TCGS	79FAI 01	6.1	0.1		ITNA	77MAE 01
915			ISE	81NAD 01	6.2			ITNA	75MIL 01
915			IC	83NAD 01	6.39	0.74		ITNA	81WAN 01
920	30		NAA	76HAN 01	6.5	0.2		ITNA	82SUZ 02
930			ISE	83NAD 01	6.57	0.47		NAA	76HAN 01
930	48		PAA	74CHA 01	6.6			ITNA	84CLE 01
945	35		ITNA	75NAD 02	6.9		35	ITNA	81GLA 03
945	35		ITNA	78NAD 02	7			AA	76NEW 01
990	20		ITNA	77MAE 01	8.5	4.2		EXRF	79GIA 01
1000			ITNA	77GLU 01	11			ITNA	77GLU 01
1000			ITNA	75KLE 01					
1177			ISE	80NAD 01					
<u>Co (ug/g)</u>					<u>Cr (ug/g)</u>				
3.9	0.2		ICPES	81CHU 01	8			EXRF	82KEE 01
4.3		11	ICPES	85HAR 01	9	2		XRF	79PRA 01
4.7	0.32		OES	76NEW 01	14.1	3.2		ICPES	84NAD 01
4.8	0.3		ITNA	76BLO 01	15			ICPES	80NAD 01
4.9			ICPES	80NAD 01	16		11	ICPES	85HAR 01
5.0		34	WXRF	82MIL 01	16	1.2		OES	76NEW 01
5.1	0.6		ITNA	78NAD 02	17	1	11	ITNA	75RIC 01
5.13	0.57		ITNA	75NAD 02	17	1		ICPES	85HAR 01
5.2	0.1		ITNA	79FRU 01	17.6	1		ITNA	76RAG 01
5.2	0.4		ITNA	73ABE 01	18			ICPES	80NAD 01
5.3	0.4		ITNA	76KUC 01	18	2		XRF	79FRU 01
5.31	0.41		ITNA	83NDI 01	18.3	1.8		ITNA	85FIL 01
5.4		4	AA	79REI 01	18.5	1.7		ITNA	78MAC 01
5.46	0.2		ITNA	79ROS 03	18.8	1.1		ITNA	76BLO 01
5.48	0.15		ITNA	73SHE 01	18.9	2.2		ITNA	75NAD 02
5.5	0.3		ITNA	77CAH 01	18.9	2.2		ITNA	78NAD 02
5.5	0.4		PAA	74CHA 01	19			AA	76NEW 01
5.5	0.6		ICPES	84NAD 01	19	0.8		ITNA	73SHE 01
5.51	0.6		ITNA	76RAG 01	19	2		ITNA	79FRU 01
5.58	0.21		ITNA	75RUC 01	19	2.8		ITNA	79ROS 03
5.6	0.4		PAA	76CHA 01	19	3		SSMS	77DON 01
5.7			ITNA	78WEA 01	19.4			FAA	75POL 01
5.7	0.1		ITNA	78LAU 02	19.4	1.3	11	AA	82LIN 03
5.7	0.12		ITNA	77ROW 03	19.5	0.8		PAA	76CHA 01
5.7	0.12	D	NAA	79STE 01	19.6	0.5		ITNA	77MAE 01
5.7	0.12		IENA	77ROW 04	19.6	0.6		AA	79ROS 03
5.7	0.3	11	ICPES	85HAR 01	19.7	0.9	D	NAA	74OND 01
5.7	0.4		ITNA	75OND 01	19.7	0.9		ITNA	75OND 01
5.78			ICPES	80NAD 01	19.8			FAA	78GUI 01
5.8	0.6		ITNA	76NEW 01	20			AA	78GUI 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cr (ug/g) cont.</u>						<u>Cs (ug/g) cont.</u>				
20			ITNA	84CLE 01		1.8		35	ITNA	81GLA 03
20	1	9	ITNA	78LAU 02		1.8	0.1		NAA	76HAN 01
20	3		ITNA	78LAU 02		1.8	0.3		ITNA	75RUC 01
20.17	0.76		RTNA	74MCC 01		1.8	0.3		ITNA	77CAH 01
20.2	0.4		AA	74RAI 01		1.9	0.2		ITNA	81WAN 01
20.3	1.4	11	AA	82LIN 03		2.3	0.1		ITNA	82SUZ 02
20.3	2.9		ITNA	75RUC 01		2.55	0.06		ITNA	73SHE 01
20.5	0.6		ITNA	79GRE 01		2.6			ITNA	75MIL 01
20.6			ITNA	75MIL 01		3.5	1.3		ITNA	78MAC 01
20.6	2.3		IENA	77ROW 04						
20.8	0.6		ICPES	81CHU 01						
20.8	0.8		ITNA	77ROW 03						
20.8	0.8	D	NAA	79STE 01		13			EXRF	82KEE 01
20.8	0.8	D	ITNA	77ROW 04		14.1	0.9		ITNA	73SHE 01
21	2		ITNA	75KLE 01		15	1.2		ITNA	77ROW 03
21.5			ITNA	78WEA 01		15	1.2	D	NAA	79STE 01
21.5	1		NAA	76HAN 01		15	1.2		ITNA	76STE 05
21.6	2		ITNA	76WEW 01		15	2		XRF	79FRU 01
21.6	2.1		PAA	74CHA 01		15	3		SSMS	77DON 01
22			ITHA	77GLU 01		15.1	0.7	11	ICPES	85HAR 01
22	8		EXRF	79GIA 01		15.7	2.7		ITNA	81WAN 01
23		4	AA	79REI 01		16.3			FAA	78GUI 01
24	3		ITNA	76KUC 01		16.8			AA	78GUI 01
25.2	3.8		ITNA	81WAN 01		16.8	1	8	SSMS	80KOP 01
32.3	0.9	12	ITNA	82SUZ 02		17	0.3		AA	73TAL 01
34.9	0.9	12	ITNA	82SUZ 02		17	1	35	RTNA	77GLA 01
						17	4		EXRF	81KIN 01
<u>Cs (ug/g)</u>						17	7.5		OES	76WEW 01
						17.1	0.2	11	AA	82LIN 03
0.35	0.04		PAA	74CHA 01		17.2	0.5		ICPES	81CHU 01
1.3	0.1		PAA	76CHA 01		17.4		11	ICPES	85HAR 01
1.3	0.2		ITNA	78LAU 02		17.7	1.5		EXRF	79GIA 01
1.32	0.11		ITNA	78NAD 02		17.9	0.2		AA	74RAI 01
1.32	0.11		ITNA	75NAD 02		18			ICPES	80NAD 01
1.36	0.1		IENA	76STE 05		18			XRF	75KLE 01
1.4			ITNA	75KLE 01		18		34	WXRF	82MIL 01
1.4		34	WXRF	82MIL 01		18.1	0.8		NAA	76HAN 01
1.4			ITNA	78WEA 01		18.4	0.3	11	AA	82LIN 03
1.4	0.08		ITNA	76RAG 01		18.4	1.1		SSMS	77PAU 01
1.4	0.1		ITNA	73ABE 01		19			ICPES	80NAD 01
1.4	0.1	9	ITNA	78LAU 02		19	3		ICPES	84NAD 01
1.4	0.1		ITNA	75OND 01		19.4	1.9		FAA	74RAI 01
1.4	0.3		ITNA	76WEW 01		20		4	AA	79REI 01
1.46	0.11		IENA	77ROW 03		21			AA	76WEW 01
1.49	0.22		ITNA	77ROW 04		22.6	3		EXRF	73SPA 01
1.52	0.11		IENA	77ROW 04		23			ITNA	77GLU 01
1.52	0.11	D	NAA	79STE 01		24	3		XRF	79PRA 01
1.6	0.1		ITNA	85FIL 01		24	3	6	PAA	82SEG 01
1.6	0.2		ITNA	79GRE 01		30	10	6	PAA	82SEG 01
1.71	0.04		ITNA	77MAE 01		30	10		PAA	80SEG 01
1.73	0.09		ITNA	79ROS 03						

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Dy (ug/g)</u>						<u>Eu (ng/g) cont.</u>				
0.57	0.04		NAA	76HAN 01		410	60		OES	76WEW 01
0.85	0.06		ITNA	73SHE 01		420	10		ITNA	77MAE 01
1	0.1		ITNA	78MAC 01		420	20		ICPES	81CHU 01
1.1	0.1		RTNA	84ODD 01		480	90		ITNA	81WAN 01
1.12	0.06	D	NAA	79STE 01		500	60		ITNA	82SUZ 02
1.12	0.06		ITNA	76STE 05						
1.12	0.06		ITNA	77ROW 03						
1.2	0.2		ITNA	84ODD 01						
1.3			AA	82GUP 02						
1.3	0.5		ITNA	75RUC 01		51			ITNA	77GLU 01
1.38	0.09		ITNA	75NAD 02		65			ISE	83KNA 01
1.4			ITNA	75MIL 01		71			IC	83NAD 01
1.4	0.1		ITNA	78NAD 02		71			ISE	81NAD 01
1.59	0.16		ITNA	77CAH 01		80	4		ISE	74THO 01
2.4	0.2		ITNA	82SUZ 02		81			VV	77GLU 01
						87			ISE	74THO 01
						90			ISE	83NAD 01
						91	5		ISE	83BET 02
						100			AA	76WEW 01
<u>Er (ug/g)</u>						<u>Fe (ug/g)</u>				
<	3	L	WXRF	82MIL 01						
<	15	L	OES	76WEW 01						
0.7			AA	82GUP 02						
9.3	0.2		RTNA	84ODD 01						
<u>Eu (ng/g)</u>										
210			ITNA	75KLE 01		6500	1300		OES	76WEW 01
270	20		ITNA	76RAG 01		7000	400		ITNA	76BLO 01
280	10		ITNA	73ABE 01		7150	800		EXRF	73SPA 01
299	33		ITNA	76STE 05		7200			EXRF	82KEE 01
300	100		ITNA	78MAC 01		7517	119		ITNA	73SHE 01
312	37		ITNA	73SHE 01		7600	100		ICPES	84NAD 01
330			ITNA	78WEA 01		7790	360		EXRF	79GIA 01
330	40		ITNA	75OND 01		7800	200		ITNA	75RIC 01
340	10		NAA	76HAN 01		7800	350		XRF	79FRU 01
340	14		ITNA	83NDI 01		7900			ITNA	84CLE 01
340	20		ITNA	78LAU 02		8000			ICPES	80NAD 01
340	40		ITNA	77ROW 03		8100	500		ITNA	79FRU 01
340	50		ITNA	84ODD 01		8100	700		ITNA	73ABE 01
344	15		ITNA	79ROS 03		8200			ICPES	80NAD 01
350	30		RTNA	84ODD 01		8230	80	11	ICPES	85HAR 01
360	30		ITNA	77CAH 01		8300			ICPES	80NAD 01
370	20		ITNA	78NAD 02		8300	600		ITNA	85FIL 01
370	20		ITNA	75NAD 02		8300	700		ITNA	76KUC 01
370	40		ITNA	76WEW 01		8350	120		AA	79ROS 03
380	40	D	NAA	79STE 01		8380	405		ITNA	83NDI 01
380	40		ITNA	77ROW 04		8400			ITNA	75KLE 01
380	40		ITNA	79GRE 01		8400	200	D	TCGS	80AND 01
390	40		ITNA	85FIL 01		8400	200		ITNA	78LAU 02
400			AA	82GUP 02		8400	200		ITNA	76RAG 01
400			ITNA	75MIL 01		8400	400	D	NAA	74OND 01
410	30		ITNA	75RUC 01		8420	240		TCGS	79FAI 01
						8440		11	ICPES	85HAR 01
						8500	60		ITNA	75NAD 02

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Fe (ug/g) cont.</u>						<u>Gd (ug/g)</u>				
8500	600		ITNA	78NAD 02		1.2			AA	82GUP 02
8527			AA	78GUI 01		1.2	0.06		ICPES	81CHU 01
8600			POL	74MAI 01		1.43	0.05		TCGS	79FAI 01
8600			ITNA	78WEA 01		2.2	0.08		TCGS	80AND 01
8630	266		EXRF	81KIN 01		2.5			ITNA	75MIL 01
8690	410		PAA	74CHA 01		3		34	WXRF	82MIL 01
8700		35	ITNA	81GLA 03		3	0.9		ITNA	840DD 01
8700	200		ITNA	79GRE 01		3.1	0.2		RTNA	840DD 01
8700	400		PAA	76CHA 01		3.6	0.4		ITNA	78NAD 02
8730			AA	76WEW 01		3.62	0.35		ITNA	75NAD 02
8800			ICPES	80NAD 01						
8800	200		ITNA	77MAE 01						
8810	210		ICPES	81CHU 01						
8900	240		XRF	79PRA 01		2			ITNA	77GLU 01
8900	300		ITNA	78MAC 01		2.3	0.1		ICPES	84NAD 02
9000	200	D	NAA	79STE 01		2.4			UU	78SIM 01
9010	150		ITNA	77ROW 03		2.7	0.22		OES	76WEW 01
9010	190	D	ITNA	77ROW 04		2.9	0.2		EXRF	79GIA 01
9030			ITNA	75MIL 01		3		34	WXRF	82MIL 01
9130	560		ITNA	79ROS 03		5	1		XRF	79PRA 01
9200		4	AA	79REI 01		14.9			FAA	75POL 01
9200	300		NAA	76HAN 01		70	5		ITNA	73SHE 01
9200	700		ITNA	81WAN 01						
9300	800		ITNA	75RUC 01						
9300	800		ITNA	77CAH 01						
9800	1000		ITNA	76WEW 01		4.02	0.05		TCGS	79FAI 01
11100			ITNA	77GLU 01		4.02	0.05	D	TCGS	80AND 01
11100	300	12	ITNA	82SUZ 02		4.28	0.03		CB	80SCH 02
11300	500	12	ITNA	82SUZ 02		4.3	0.1	35	TCGS	79GLA 04
						4.57			CB	79PRA 01
<u>Ga (ug/g)</u>						<u>H (%)</u>				
4.5			ITNA	77GLU 01						
4.5	0.5		RTNA	75RUC 01		2.6			FD	80KHA 02
4.8	0.2		IENA	78WAN 01						
5	1		ITNA	78MAC 01						
5.15	0.3		ITNA	75RUC 01						
5.3	0.5		ITNA	77CAH 01		0.72	0.071		ITNA	79ROS 03
5.4	0.8		ITNA	73SHE 01		0.81	0.1		ITNA	78LAU 02
5.5	0.7		ITNA	81WAN 01		0.83	0.06		IENA	77ROW 03
5.8		34	WXRF	82MIL 01		0.83	0.06	D	IENA	77ROW 04
5.8	0.4		IENA	77ROW 03		0.83	0.06	D	NAA	79STE 01
5.8	0.4	D	NAA	79STE 01		0.89	0.02		ITNA	75NAD 02
5.8	0.4	5	IENA	76STE 05		0.89	0.02		ITNA	78NAD 02
5.8	0.5		ITNA	85FIL 01		0.91	0.11		ITNA	77ROW 04
6.1	0.3		EXRF	79GIA 01		0.91	0.15		ITNA	85FIL 01
6.1	0.6	5	IENA	76STE 05		0.92	0.05		ITNA	73SHE 01
6.2	0.3		OES	76WEW 01		0.95			ITNA	75KLE 01
7.7	1.4		ITNA	82SUZ 02		0.96			ITNA	78WEA 01
8	1		XRF	79PRA 01		0.96	0.05		ITNA	75OND 01
8.5			XRF	75KLE 01		0.96	0.06		ITNA	79GRE 01
9	2		NAA	76HAN 01						
<u>H2O-T (%)</u>						<u>Hf (ug/g)</u>				
4.5			ITNA	77GLU 01						
4.5	0.5		RTNA	75RUC 01		2.6				
4.8	0.2		IENA	78WAN 01						
5	1		ITNA	78MAC 01						
5.15	0.3		ITNA	75RUC 01						
5.3	0.5		ITNA	77CAH 01		0.72	0.071		ITNA	79ROS 03
5.4	0.8		ITNA	73SHE 01		0.81	0.1		ITNA	78LAU 02
5.5	0.7		ITNA	81WAN 01		0.83	0.06		IENA	77ROW 03
5.8		34	WXRF	82MIL 01		0.83	0.06	D	IENA	77ROW 04
5.8	0.4		IENA	77ROW 03		0.83	0.06	D	NAA	79STE 01
5.8	0.4	D	NAA	79STE 01		0.89	0.02		ITNA	75NAD 02
5.8	0.4	5	IENA	76STE 05		0.89	0.02		ITNA	78NAD 02
5.8	0.5		ITNA	85FIL 01		0.91	0.11		ITNA	77ROW 04
6.1	0.3		EXRF	79GIA 01		0.91	0.15		ITNA	85FIL 01
6.1	0.6	5	IENA	76STE 05		0.92	0.05		ITNA	73SHE 01
6.2	0.3		OES	76WEW 01		0.95			ITNA	75KLE 01
7.7	1.4		ITNA	82SUZ 02		0.96			ITNA	78WEA 01
8	1		XRF	79PRA 01		0.96	0.05		ITNA	75OND 01
8.5			XRF	75KLE 01		0.96	0.06		ITNA	79GRE 01
9	2		NAA	76HAN 01						

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Hf (ug/g) cont.</u>						<u>I (ug/g)</u>				
0.97	0.09		ITNA	79FRU 01		2.68	0.2		RTNA	77ROO 01
0.97	0.1		ITNA	73ABE 01		2.78	0.38		ITNA	73SHE 01
1.00	0.07		ITNA	76RAG 01		2.8			ITNA	78WEA 01
1.02	0.03		ITNA	77MAE 01		2.8	0.4		ITNA	75RUC 01
1.1			ITNA	75MIL 01		2.9	0.3	D	NAA	79STE 01
1.1	0.07		NAA	76HAN 01		2.9	0.3		ITNA	76STE 05
1.1	0.15		ITNA	75RUC 01		3		34	WXRF	82MIL 01
1.1	0.2		ITNA	77CAH 01		3.3	0.3		PAA	77WIL 01
1.1	0.4		ITNA	81WAN 01		3.3	0.3		PAA	78HIS 01
1.15	0.12		ITNA	76WEW 01		3.3	0.4		ITNA	77CAH 01
1.4	0.09	9	ITNA	82SUZ 02		3.3	0.5		ITNA	77MAE 01
1.53	0.5	9	ITNA	82SUZ 02		3.7	0.5		IENA	84GLA 02
						4	1		ITNA	79GRE 01
<u>Hg (ng/g)</u>						6.2	1.9		ITNA	81WAN 01
						6.63	1.2		ITNA	75NAD 02
70	5		CVAA	84BAR 02						
88	5		CVAA	75KLE 01		<u>In (ng/g)</u>				
100			PAA	74CHA 01		16.9	1.2		IENA	77ROW 03
100			PAA	76CHA 01		16.9	1.7	5	IENA	76STE 05
100			PAA	77JER 01		17	1	D	NAA	79STE 01
110			ITNA	78WEA 01		17.8	1	5	IENA	76STE 05
110	10		RTNA	84DEL 01		30	20		ITNA	76RAG 01
110	10		RTNA	74ORV 01		40	10		ITNA	73SHE 01
110	10		RTNA	75RUC 01		56	9		ITNA	82SUZ 02
110	16		RTNA	77JER 01		70			ITNA	75KLE 01
110	50		ITNA	77JER 01		180	20		ITNA	77CAH 01
111	10		FAA	77GLA 03		200	120		ITNA	75OND 01
117	13		FAA	75KOI 01		220	20		ITNA	75RUC 01
120			CVAA	82NAD 01		230	20		PAA	74CHA 01
120			CVAA	81NAD 01		230	30		PAA	76CHA 01
120	20		ITNA	79FRU 01						
122	29		CVAA	80DUM 01		<u>Ir (ng/g)</u>				
126	6		CVAA	74RAI 01		2.48	0.27		ITNA	73SHE 01
136	9		FAA	82UCH 02		2.5			ITNA	78WEA 01
160	40		ITNA	82SUZ 02		3.53	0.52		RTNA	77NAD 02
160	80		ITNA	76WEW 01						
180			ITNA	77GLU 01		<u>K (ug/g)</u>				
230	20		ITNA	78NAD 02		2410	70		XRF	79PRA 01
230	20		ITNA	75NAD 02		2500			ICPES	80NAD 01
230	50		ITNA	76BLO 01		2500	200	11	ICPES	85HAR 01
510	170		ITNA	75RIC 01		2500	200		ICPES	84NAD 01
950	90		ITNA	73SHE 01		2570		4	AA	79REI 01
<u>Ho (ng/g)</u>						2600		11	ICPES	85HAR 01
240	30		IENA	77ROW 03		2600	200		ITNA	76KUC 01
240	30		IENA	76STE 05		2650	190		ITNA	76BLO 01
240	30	D	NAA	79STE 01		2660	20		ITNA	75RIC 01
250			FAA	82GUP 02		2700			ICPES	80NAD 01
260	30		ITNA	84ODD 01		2700			ICPES	80NAD 01
270	40		RTNA	84ODD 01		2700			ICPES	80NAD 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>K (ug/g) cont.</u>						<u>La (ug/g) cont.</u>				
2700	100		PAA	76CHA 01		10.5			ITNA	75KLE 01
2700	200		ITNA	79FRU 01		10.5	0.2		ITNA	79FRU 01
2700	200		ITNA	76RAG 01		10.5	0.5		ITNA	73ABE 01
2700	300		NAA	76HAN 01		10.5	0.9		ITNA	81WAN 01
2750	100	D	TCGS	80AND 01		10.6	0.4		ITNA	77CAH 01
2750	100		TCGS	79FAI 01		10.7			ITNA	78WEA 01
2780	230		ITNA	75NAD 02		10.7	0.3		ITNA	77MAE 01
2800			ITNA	78WEA 01		10.7	0.4		ITNA	82SUZ 02
2800	100		ITNA	73ABE 01		10.7	1.2		ITNA	75OND 01
2800	200		ITNA	77MAE 01		10.8	0.3		RTNA	84ODD 01
2800	200		ITNA	79GRE 01		10.8	0.8		IENA	77ROW 04
2800	200		ITNA	78NAD 02		11			OES	82GUP 02
2800	200		ITNA	78LAU 02		11	1		ITNA	85FIL 01
2800	300		ITNA	75OND 01		11.2	0.3		ITNA	83NDI 01
2800	300		ITNA	77CAH 01		11.3			ITNA	75MIL 01
2800	500		ITNA	76WEW 01		11.3	0.4		ITNA	75RUC 01
2840	80		GAMMA	73ABE 01		11.3	3.3		ITNA	73SHE 01
2900			ITNA	75MIL 01		11.4	0.3	11	ICPES	85HAR 01
2900			ITNA	75KLE 01		11.4	0.4		ITNA	84ODD 01
2900			ICPES	80NAD 01		11.4	0.5		IENA	77ROW 03
2900	200		ITNA	75RUC 01		11.4	0.5		IENA	76STE 05
2930	120		ITNA	83NDI 01		11.5	0.7		ITNA	79GRE 01
2980	200		ITNA	76STE 05		12.7		11	ICPES	85HAR 01
2980	240		ITNA	77ROW 03						
3000	75		ICPES	81CHU 01						
3000	200	D	NAA	79STE 01						
3000	200		ITNA	78MAC 01		24	1.1		OES	76WEW 01
3040	230		ITNA	85FIL 01		25			AA	76WEW 01
3100	500		ITNA	81WAN 01		28.7	0.6		ICPES	81CHU 01
3100	600		OES	76WEW 01						
3300			ITNA	77GLU 01						
3500	360		ITNA	73SHE 01						
4000	200		ITNA	82SUZ 02		100			ITNA	75MIL 01
						100			FAA	82GUP 02
<u>La (ug/g)</u>						109	11	D	ITNA	77ROW 04
						109	11	D	NAA	79STE 01
6	0.17		OES	76WEW 01		109	11		ITNA	77ROW 03
7.89	0.15		ITNA	75NAD 02		120	5		ITNA	75NAD 02
7.9	0.2		ITNA	78NAD 02		120	10		ITNA	78NAD 02
8.3	0.2		ITNA	78MAC 01		130	5		ITNA	77MAE 01
9.1	0.4		ITNA	76BLO 01		130	20		ITNA	84ODD 01
9.3	0.3		ICPES	81CHU 01		130	30		ITNA	77CAH 01
9.3	0.5		ITNA	78LAU 02		140	10		ITNA	75OND 01
9.5	0.2		ITNA	76RAG 01		140	20		ITNA	78LAU 02
9.76	0.45		NAA	76HAN 01		140	20		NAA	76HAN 01
10		34	WXRF	82MIL 01		140	30		RTNA	84ODD 01
10			FAA	82GUP 02		140	70		ITNA	81WAN 01
10.3	0.5		ITNA	77ROW 03		150	10		ITNA	75RUC 01
10.3	0.5	D	ITNA	77ROW 04		150	20		ITNA	76WEW 01
10.3	0.5	D	NAA	79STE 01		210	20		ITNA	82SUZ 02
10.3	1.1		ITNA	76STE 05		416	17		ITNA	73SHE 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mg (ug/g)</u>									
980	250		ITNA	73SHE 01	40	4		ITNA	76WEW 01
1000	100		ICPES	84NAD 01	40	7		ITNA	78NAD 02
1100			ITNA	77GLU 01	40.3	6.9		ITNA	75NAD 02
1100	300		ITNA	77MAE 01	41			ITNA	78WEA 01
1150	40	11	ICPES	85HAR 01	41	1		ITNA	75RIC 01
1190		11	ICPES	85HAR 01	41	2		NAA	76HAN 01
1200			ICPES	80NAD 01	41	4	D	NAA	79STE 01
1200			ICPES	80NAD 01	41	6		ITNA	80BUA 01
1340	270		ITNA	82SUZ 02	41	6		ITNA	73ABE 01
1370	40		ICPES	81CHU 01	41.1	3.6		ITNA	76STE 05
1400			ICPES	80NAD 01	41.1	3.6		ITNA	77ROW 03
1500	300		ITNA	75NAD 02	41.2		11	ICPES	85HAR 01
1500	300		ITNA	78NAD 02	41.7	0.5		AA	79ROS 03
1600			ICPES	80NAD 01	42			ICPES	80NAD 01
1600	150		PAA	74CHA 01	42	1		ITNA	79GRE 01
1600	200		PAA	76CHA 01	42	6		ITNA	79FRU 01
1600	300		OES	76WEW 01	42.5	5.8		ITNA	81WAN 01
1700	200		ITNA	79GRE 01	42.8	1.9		ITNA	83NDI 01
1700	300		ITNA	76STE 05	42.8	2.4		ITNA	77CAH 01
1700	300	D	NAA	79STE 01	43	1		ITNA	78MAC 01
1700	300		ITNA	77ROW 03	43	3		PAA	76CHA 01
1900	400		NAA	76HAN 01	43	4	D	NAA	74OND 01
2000	400		ITNA	76WEW 01	43	4		ITNA	75OND 01
2000	500		ITNA	75OND 01	43	6		ITNA	76BLO 01
2300	400		ITNA	81WAN 01	43.5	2.4		TCGS	79FAI 01
2300	700		ITNA	73ABE 01	43.5	2.4	D	TCGS	80AND 01
2480			ITNA	75KLE 01	43.7	1.8		ITNA	75RUC 01
2500	800		ITNA	76RAG 01	44	0.9	11	AA	82LIN 03
4000	2000		ITNA	78LAU 02	44	2		ITNA	78LAU 02
8200	2000		ITNA	78MAC 01	44.5	0.9		ITNA	77MAE 01
					44.6	0.4	11	AA	82LIN 03
<u>Mn (ug/g)</u>									
27.5	2.4		ITNA	82SUZ 02	45	1.4		ICPES	80NAD 01
36	1.8		OES	76WEW 01	45	3		ITNA	76KUC 01
36.8			FAA	78GUI 01	46			ITNA	75MIL 01
37			EXRF	82KEE 01	46	3		ITNA	75KLE 01
37	2		EXRF	81KIN 01	47.1	4.1		PAA	74CHA 01
37	4		XRF	79PRA 01					
38		4	AA	79REI 01					
38	2.6		ITNA	73SHE 01	0.2	0.02		PAA	74CHA 01
38	8	35	ITNA	81GLA 03	0.2	0.04		PAA	76CHA 01
38.3	0.8	11	ICPES	85HAR 01	0.3	0.1		PAA	80SEG 01
38.5			AA	78GUI 01	0.3	0.1	6	PAA	82SEG 01
39		34	WXRF	82MIL 01	0.3	0.1	6	PAA	82SEG 01
39			ITNA	84CLE 01	0.41	0.1		ITNA	82SUZ 02
39			ITNA	77GLU 01	3.08	0.12		IENA	77ROW 03
39	2		ICPES	84NAD 01	3.08	0.12	D	IENA	77ROW 04
39	3		EXRF	79GIA 01	3.1	0.1	D	NAA	79STE 01
39.5	0.7		ITNA	76RAG 01	3.14	0.28		RTNA	78NAD 01
40			AA	76WEW 01	3.2	0.4		ITNA	77CAH 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mo (ug/g) cont.</u>					<u>Na (ug/g) cont.</u>				
3.3			ICPES	80NAD 01	406	7		ITNA	83NDI 01
3.4			ITNA	75KLE 01	409			ICPES	80NAD 01
3.6	0.16		OES	76WEW 01	410			ITNA	75MIL 01
4		34	WXRF	82MIL 01	414			ITNA	78WEA 01
4.7			ICPES	80NAD 01	414	20		ITNA	75OND 01
5			ITNA	78WEA 01	415	42		ITNA	76WEW 01
5			ITNA	77GLU 01	420	20		ITNA	79FRU 01
					420	30		ITNA	73ABE 01
					439	42		ICPES	84NAD 01
					480		4	AA	79REI 01
1.01			IC	83NAD 01	840	30		ITNA	82SUZ 02
1.2	0.2	35	TCGS	79GLA 04	1200	240		OES	76WEW 01
1.3	0.02		CB	80SCH 02					
1.3	0.2	D	TCGS	80AND 01					
1.3	0.2		TCGS	79FAI 01					
1.98			CB	79PRA 01					
						<	15	OES	76WEW 01
						5		WXRF	82MIL 01
<u>Na (ug/g)</u>					<u>Nd (ug/g)</u>				
325	6		ITNA	75RIC 01					
330		11	ICPES	85HAR 01	6.4	1.5		ITNA	73SHE 01
330	20	11	ICPES	85HAR 01	7		34	WXRF	82MIL 01
335			ICPES	80NAD 01	8			AA	82GUP 02
340	10		ITNA	78LAU 02	8.7	1	D	NAA	79STE 01
347	32		ITNA	75NAD 02	8.7	1	D	ITNA	77ROW 04
350	20		PAA	76CHA 01	8.7	1		ITNA	77ROW 03
350	30		ITNA	78NAD 02	9.5	1.9		ICPES	81CHU 01
351	30		PAA	74CHA 01	9.7	0.4		ITNA	84ODD 01
352	34		ITNA	77CAH 01	9.9	0.6		RTNA	84ODD 01
353	21		ITNA	76KUC 01	10.7			ITNA	75MIL 01
360	10		ITNA	79GRE 01	11.3	2		TCGS	79FAI 01
360	20		NAA	76HAN 01	11.3	2	D	TCGS	80AND 01
368	9		ITNA	77MAE 01	16.9	1.4	12	ITNA	82SUZ 02
370			ICPES	80NAD 01	17.8	3.7	12	ITNA	82SUZ 02
370	33		ITNA	73SHE 01					
380			ICPES	80NAD 01					
380	3		ITNA	78MAC 01					
380	12		ITNA	76RAG 01	10			EXRF	82KEE 01
380	25		ITNA	76STE 05	11			IENA	77ROW 03
380	25		ITNA	77ROW 03	11.5		11	ICPES	85HAR 01
380	25	D	NAA	79STE 01	12	0.7		ITNA	78NAD 02
383	14		ITNA	75RUC 01	12.1	0.7		ITNA	75NAD 02
387	42		ITNA	81WAN 01	12.5	0.1	11	AA	82LIN 03
390			ITNA	75KLE 01	13	3	9	ITNA	78LAU 02
390			ITNA	77GLU 01	13.5	1.2		PAA	74CHA 01
390		34	WXRF	82MIL 01	13.8	0.4	11	ICPES	85HAR 01
395			ITNA	86GAU 01	14		4	AA	79REI 01
400			ITNA	84CLE 01	14	1		PAA	80SEG 01
400	7		ICPES	81CHU 01	14	1	6	PAA	82SEG 01
400	30		ITNA	76BLO 01	14	2	6	PAA	82SEG 01
400	900	R	ITNA	81GLA 03	14	2		XRF	79FRU 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference						
<u>Ni (ug/g) cont.</u>																
14	2		PAA	76CHA 01		71			AA	76WEW 01						
14.3			AA	78GUI 01		92			ICPES	80NAD 01						
14.5			XRF	75KLE 01		104			ICPES	80NAD 01						
14.5	0.6	11	AA	82LIN 03		117	4	11	ICPES	85HAR 01						
14.5	1.2		EXRF	79GIA 01		120			VV	77GLU 01						
14.7	0.6	6	IDMS	74MOO 01		121		11	ICPES	85HAR 01						
14.7	0.6	6	IDMS	74MOO 01		137	14		ICPES	84NAD 01						
14.8			POL	74MAI 01		138		34	WXRF	82MIL 01						
14.8	0.7	6	IDMS	74MOO 01		150	9		ICPES	81CHU 01						
15			AA	76WEW 01		156			ICPES	81NAD 01						
15		34	WXRF	82MIL 01		250			COLOR	80NAD 01						
15	1.1		OES	76WEW 01		270			COLOR	80NAD 01						
15	3		SSMS	77DON 01		1200	100		XRF	79PRA 01						
15.2	0.5		ICPES	81CHU 01		<u>Pb (ug/g)</u>										
15.5	1.1	8	SSMS	80KOP 01		12	120	R	OES	76WEW 01						
16		D	NAA	79STE 01		13.6	6.5		EXRF	79GIA 01						
16			ICPES	80NAD 01		15			ICPES	80NAD 01						
16	2		ICPES	84NAD 01		19.1			ICPES	81NAD 01						
16	2		ITNA	79FRU 01		20			ICPES	80NAD 01						
16	4		ITNA	73ABE 01		20	2		XRF	79PRA 01						
16	5		ITNA	77CAH 01		23			VV	77GLU 01						
16.4			IENA	77ROW 04		23	0.9		EXRF	73SPA 01						
17.1			FAA	78GUI 01		24		4	AA	79REI 01						
17.5	1		EXRF	81KIN 01		24			ICPES	85HAR 01						
18	4		ITNA	75OND 01		24	4	11	ICPES	82LIN 03						
18	4	D	NAA	74OND 01		25.5	4.2	11	AA	82LIN 03						
18	5		NAA	76HAN 01		26	6		FAA	76BLO 01						
18.4	2.1		ITNA	75RUC 01		26.1			AA	78GUI 01						
18.9	0.8	12	ITNA	82SUZ 02		27.9	2.5	8	SSMS	80KOP 01						
19			ICPES	80NAD 01		28	1	6	PAA	82SEG 01						
20			ITNA	77GLU 01		28	2		PAA	80SEG 01						
20	11		ITNA	85FIL 01		28	2	6	PAA	82SEG 01						
20.4	1	12	ITNA	82SUZ 02		28	3.6		SSMS	77PAU 01						
83	7		XRF	79PRA 01		28	4		IDMS	78CAR 02						
						28	5		FAA	75BLO 02						
<u>O (%)</u>																
						28.4			POL	74MAI 01						
						28.5	1.5		ICPES	81CHU 01						
10.08			CALC	79PRA 01		28.6			FAA	78GUI 01						
15.05	0.11	34	14NAA	80KHA 02		29	0.5		AA	73TAL 01						
						29	2		PAA	77JER 01						
<u>Os (ug/g)</u>																
<	1		RTNA	77NAD 02		29.4			IDMS	75KLE 01						
						30			AA	76WEW 01						
						30.8			FAA	75POL 01						
						31	3		EXRF	81KIN 01						
						32		34	WXRF	82MIL 01						
						32	2		PAA	76CHA 01						
						32	2		PAA	77JER 01						
						32.1	1.8		PAA	74CHA 01						
						33	2		AA	79ROS 03						
						33	3		SSMS	77DON 01						
						33.8	0.1	11	AA	82LIN 03						
						36		11	ICPES	85HAR 01						

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Pd (ng/g)</u>										
<	5		RTNA	77NAD 02		24			XRF	75KLE 01
<u>Pr (ug/g)</u>										
<	2	L	FAA	82GUP 02		24			ITNA	75MIL 01
<	15	L	OES	76WEW 01		24.7	1		ITNA	79ROS 03
2		34	WXRF	82MIL 01		26	1	12	ITNA	82SUZ 02
3.6	0.4	12	ITNA	82SUZ 02		28.6	3.2		EXRF	73SPA 01
4.6	0.5	12	ITNA	82SUZ 02		30	1	12	ITNA	82SUZ 02
4.9	0.5		RTNA	840DD 01		<u>Rh (ug/g)</u>				
<u>Pt (ng/g)</u>										
<	15000	L	OES	76WEW 01		<	5	L	OES	76WEW 01
186	2.3		RTNA	77NAD 01		18	5000	L	OES	76WEW 01
270	20		RTNA	77NAD 02				RTNA	77NAD 02	
<u>Rb (ug/g)</u>										
10	3		ITNA	81WAN 01		0.17			ICPES	80NAD 01
11	1		XRF	79PRA 01		0.17			CB	80NAD 01
15		35	ITNA	81GLA 03		0.9			CB	80NAD 01
16.3	3.7		ITNA	75NAD 02		0.9			ICPES	80NAD 01
16.3	3.7		ITNA	78NAD 02		1.22			IC	83NAD 01
18		34	WXRF	82MIL 01		1.25			XRF	77GLU 01
18	1		XRF	79FRU 01		1.29	0.03	D	TCGS	80NAD 01
18.3	1.1	D	IENA	77ROW 04		1.29	0.03		TCGS	79FAI 01
18.3	1.6		IENA	77ROW 03		1.3	0.02		IC	85GEN 01
18.3	1.6	D	NAA	79STE 01		1.32			XRF	82NAD 01
19	1.5		ITNA	76RAG 01		1.32	0.01		XRF	81NAD 01
19	1.9		ITNA	73SHE 01		1.32	0.03		CB	86GAU 01
19	2		ITNA	79FRU 01		1.32	0.07		CB	85GLA 03
19	2		ITNA	73ABE 01		1.34	0.08		TCGS	77JUR 01
19	6		ITNA	76WEW 01		1.52	0.05		CB	84GLA 11
19.4	2.3		ITNA	77ROW 04		1.99			XRF	79PRA 01
19.5			ITNA	75KLE 01		2.02			CB	77LAD 01
20	2		PAA	76CHA 01		<u>Sb (ug/g)</u>				
20	2		PAA	75OND 01		0.61	0.05		ITNA	77LAD 01
20	2		ITNA	79GRE 01		1.8	0.9		FAA	82SUZ 02
20	2	9	ITNA	78LAU 02		2.2			ITNA	77ARU 01
20	4		ITNA	78LAU 02		2.3	5.8	R*	COLOR	75MIL 01
20.1	0.6		EXRF	79GIA 01		2.6	2		ITNA	77ARU 01
21			ITNA	78WEA 01		2.6	3.6		ITNA	77ARU 01
21	2		ITNA	75OND 01		2.7			ITNA	85FIL 01
22	2.9		OES	76WEW 01		2.8			ITNA	77ROW 04
22.5	0.7		ITNA	77MAE 01		2.8	0.7		ITNA	81WAN 01
22.5	3.7		ITNA	75RUC 01		2.8			IENA	77ROW 04
22.8	4.8		ITNA	77CAH 01		2.8	0.7		ITNA	82MIL 01
23	3		NAA	76HAN 01		3.0	34		WXRF	85FIL 01
23	4		ITNA	85FIL 01		3.0	5		ITNA	77ROW 04
23	7		ITNA	76KUC 01		3.0			IENA	77ROW 03

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sb (ug/g) cont.</u>						<u>Sc (ug/g) cont.</u>				
3.0			RTNA	75RUC 01		3.8	0.1	11	ICPES	85HAR 01
3.0		D	NAA	79STE 01		3.8	0.4		ITNA	76WEW 01
3.0			ITNA	77GLU 01		3.81	0.47		ITNA	75RUC 01
3.06	1.4		ITNA	75NAD 02		3.88	0.15		NAA	76HAN 01
3.09	0.26		PAA	74CHA 01		3.9	0.2		ITNA	76KUC 01
3.1	1.4		ITNA	78NAD 02		3.95	0.06		IENA	77ROW 04
3.2		5	IENA	77ROW 04		3.98	0.04		ITNA	78MAC 01
3.2		35	ITNA	81GLA 03		4	0.2		ITNA	79GRE 01
3.4	0.1		ITNA	76RAG 01		4.1		34	WXRF	82MIL 01
3.4	0.8		ITNA	75RUC 01		4.1			ITNA	75MIL 01
3.6	0.8		ITNA	77CAH 01		4.1	0.2		ITNA	81WAN 01
3.6	1.2		ITNA	77MAE 01		4.1	0.4		ITNA	85FIL 01
3.62			FAA	75POL 01		4.2	0.1		ITNA	77MAE 01
3.7	0.3		ITNA	79FRU 01		4.5			ITNA	75KLE 01
3.7	2		ITNA	73ABE 01		5.4	0.1		ITNA	82SUZ 02
3.8			ITNA	84CLE 01						
3.8	0.2		ITNA	78MAC 01						
3.8	0.4		NAA	76HAN 01						
3.82	0.1		ITNA	78LAU 02		1.1	0.08		CPXRF	80KIR 01
3.9			ITNA	78WEA 01		2			HAA	74BYR 02
3.9	0.24		ITNA	77JER 01		2.3	0.2	9	ITNA	82SUZ 02
3.9	0.3		PAA	76CHA 01		2.4	0.1		ITNA	78NAD 02
3.9	0.3		PAA	77JER 01		2.44	0.08		ITNA	75NAD 02
3.9	1.3		ITNA	75OND 01		2.5	0.2		ITNA	80WAN 01
4.1	1.2		ITNA	76WEW 01		2.51	0.13	8	SSMS	80KOP 01
4.3	0.3		ITNA	79GRE 01		2.6	0.1	9	ITNA	82SUZ 02
4.4	0.3		FAA	78HAY 01		2.6	0.16		FAA	77ARU 01
4.45			ITNA	75KLE 01		2.6	0.3	9	ITNA	80WAN 01
6.4	1.6		ITNA	73SHE 01		2.7	0.2		RTNA	74ORV 01
						2.8			ITNA	77GLU 01
<u>Sc (ug/g)</u>						2.8	0.11		RTNA	75RUC 01
						2.86	0.13		DCPES	81CAR 02
3.4	0.3		ITNA	77CAH 01		2.86	0.13		GCMES	75KLE 01
3.4	0.3		ITNA	73ABE 01		2.86	0.13		GCMES	74TAL 02
3.47			ITNA	84GLA 11		2.9	0.1		ICPES	80HAA 01
3.5	0.08		ITNA	75NAD 02		2.9	0.2		ITNA	79GRE 01
3.5	0.1		ITNA	78NAD 02		2.9	0.2		XRF	77ARU 01
3.58	0.35		PAA	74CHA 01		2.9	0.4		ITNA	76RAG 01
3.6	0.08		OES	76WEW 01		2.99	0.07		SSMS	77PAU 01
3.6	0.3		ITNA	83NDI 01		3		34	WXRF	82MIL 01
3.6	0.3		PAA	76CHA 01		3.0	0.3		PAA	76CHA 01
3.68	0.08		ITNA	76RAG 01		3.0	0.3	H	OES	80CLA 01
3.69	0.05		ITNA	78LAU 02		3.0	0.3	D	NAA	79STE 01
3.7			ITNA	78WEA 01		3.0	0.3	D	IENA	77ROW 04
3.7	0.1		ITNA	75RIC 01		3.0	0.3		IENA	77ROW 03
3.7	0.3		ITNA	75OND 01		3.0	0.4		RTNA	80KNA 01
3.75	0.24		ITNA	79ROS 03		3.0	0.4	6	PAA	82SEG 01
3.8		11	ICPES	85HAR 01		3	1	6	PAA	82SEG 01
3.8	0.05	D	NAA	79STE 01		3	1		PAA	80SEG 01
3.8	0.05		ITNA	77ROW 03		3.03	0.28		PAA	74CHA 01
3.8	0.05	D	ITNA	77ROW 04		3.05			ITNA	75KLE 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Se (ug/g) cont.</u>										
3.05	0.48		ASV	76AND 01		1.3	0.19		ITNA	73SHE 01
3.1			ITNA	78WEA 01		1.3	0.2		ICPES	81CHU 01
3.1	0.2		EXRF	79GIA 01		1.38	0.09		ITNA	77ROW 04
3.1	0.3		ITNA	85FIL 01		1.38	0.1		IENA	76STE 05
3.1	0.4		XRF	79FRU 01		1.4			FAA	82GUP 02
3.1	0.6		ITNA	78MAC 01		1.4	0.1		IENA	77ROW 03
3.1	1.6		ITNA	76WEW 01		1.4	0.1		ITNA	78MAC 01
3.2	0.3		ITNA	75RIC 01		1.41	0.06	D	NAA	79STE 01
3.2	0.4		ITNA	76BL0 01		1.41	0.06		IENA	77ROW 04
3.3	0.2	9	ITNA	78LAU 02		1.53	0.02		TCGS	79FAI 01
3.3	0.3		ITNA	79FRU 01		1.53	0.02	D	TCGS	80AND 01
3.3	0.4		ITNA	73ABE 01		1.55	0.07		NAA	76HAN 01
3.3	0.6		ITNA	78LAU 02		1.6			ITNA	75MIL 01
3.4	0.2		ITNA	75OND 01		1.6	0.2		ITNA	77CAH 01
3.4	0.2	D	NAA	74OND 01		1.66	0.16		ITNA	75NAD 02
3.5	0.3		ITNA	77MAE 01		1.7			ITNA	78WEA 01
3.6	0.4		ITNA	75RUC 01		1.7	0.2		ITNA	78NAD 02
3.7			ITNA	84CLE 01		1.7	0.2		ITNA	75OND 01
3.7	0.7		ITNA	77ROW 04		1.7	0.3		ITNA	73ABE 01
3.8	0.51		ITNA	73SHE 01		1.7	0.3		ITNA	84ODD 01
3.8	0.7		ITNA	77CAH 01		1.72	0.08		ITNA	76RAG 01
3.9	0.4		ITNA	81WAN 01		1.74	0.02		ITNA	78LAU 02
4.7			COLOR	74BYR 02		1.8	0.07		ITNA	85FIL 01
5.5	0.5		EXRF	73SPA 01		1.8	0.1		ITNA	84ODD 01
6	1		XRF	79PRA 01		1.8	0.1		ITNA	75RUC 01
						1.83	0.08		ITNA	83NDI 01
						1.9	0.2		ITNA	79GRE 01
						1.93	0.14		ITNA	77MAE 01
2.1	0.42		OES	76WEW 01		2.9			ITNA	82SUZ 02
2.6		4	AA	79REI 01						
2.68	0.2		ICPES	84NAD 01						
2.95	0.06		TCGS	79FAI 01						
2.95	0.06	D	TCGS	80AND 01		2	10	R	OES	76WEW 01
3.0	0.4		PAA	76CHA 01		4	0.2		ICPES	80HAA 01
3.12	0.37		ITNA	83NDI 01		5		34	WXRF	82MIL 01
3.14			ICPES	80NAD 01		8			ICPES	80NAD 01
3.17			ICPES	80NAD 01		9.7			ICPES	80NAD 01
3.19			ICPES	80NAD 01		10			ITNA	77GLU 01
3.19	0.1		XRF	79PRA 01		10	1		PAA	76CHA 01
3.2			AA	76WEW 01		10	1		PAA	80SEG 01
3.21			ICPES	80NAD 01		10	1	6	PAA	82SEG 01
3.5	0.8		14NAA	76BL0 01		10.2	1		PAA	74CHA 01
3.92			VV	77GLU 01		11	0.4	6	PAA	82SEG 01
						125	20		ITNA	73SHE 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sr (ug/g)</u>						<u>Ta (ng/g)</u>				
1.02	0.05		ITNA	75NAD 02		170			ITNA	75KLE 01
1.33	0.1		PAA	74CHA 01		210		35	ITNA	81GLA 03
91	9	12	ITNA	82SUZ 02		210	20		ITNA	77CAH 01
93	7	12	ITNA	82SUZ 02		210	20		ITNA	75RUC 01
93	9.2		ITNA	73SHE 01		230	20		ITNA	76RAG 01
99		4	AA	79REI 01		240			ITNA	78WEA 01
112	26		ITNA	76RAG 01		240	10		ITNA	75NAD 02
120	20		NAA	76HAN 01		240	10		ITNA	78NAD 02
123			ITNA	75KLE 01		240	25		ITNA	85FIL 01
125	26		ITNA	78NAD 02		240	40		ITNA	75OND 01
128	3		XRF	79PRA 01		250	10		ITNA	77MAE 01
129			ITNA	75MIL 01		250	30		NAA	76HAN 01
131	23		ITNA	76STE 05		270	20		ITNA	79ROS 03
136	2	11	ICPES	85HAR 01		273	6		IENA	77ROW 03
140	2.8		ICPES	81CHU 01		273	6	D	NAA	79STE 01
140	15		PAA	76CHA 01		273	9	D	IENA	77ROW 04
140	40		ITNA	78LAU 02		290	50		ITNA	78LAU 02
142		11	ICPES	85HAR 01		300			ITNA	77ROW 04
144			XRF	75KLE 01		300			ITNA	75MIL 01
145	9		ITNA	75RUC 01		350	20		ITNA	82SUZ 02
150	20		XRF	79FRU 01		360	28		ITNA	73SHE 01
151		34	WXRF	82MIL 01		460	50		ITNA	73ABE 01
151	4		EXRF	79GIA 01						
155	6		ITNA	77CAH 01		<u>Tb (ng/g)</u>				
155	15		EXRF	73SPA 01						
159	14		IENA	77ROW 04		30			ITNA	73SHE 01
160	10		IENA	77ROW 03		200	20		ITNA	76RAG 01
161	9	D	NAA	79STE 01		200	40		ITNA	76WEW 01
161	9	5	IENA	76STE 05		230	10		ITNA	78LAU 02
161	16		ITNA	75OND 01		230	50		ITNA	75OND 01
164	14		ITNA	77MAE 01		230	60		ITNA	73ABE 01
164	25		ITNA	81WAN 01		260	20		ITNA	82SUZ 02
165	21	5	IENA	76STE 05		270	10	D	NAA	79STE 01
170	10		ITNA	73ABE 01		274	12		IENA	77ROW 03
170	17		ITNA	76WEW 01		274	12	D	IENA	77ROW 04
170	20		ITNA	78MAC 01		290	80		ITNA	85FIL 01
170	20	9	ITNA	78LAU 02		310	40		ITNA	84ODD 01
170	20		ITNA	79FRU 01		340	20		RTNA	84ODD 01
171	22		ITNA	85FIL 01		400	20		ITNA	78NAD 02
190			ITNA	77ROW 04		400	20		ITNA	75NAD 02
280	56		OES	76WEW 01		500			ITNA	75MIL 01
						<u>Te (ng/g)</u>				
						<	600	L	WXRF	82MIL 01
						<	690	L	ITNA	82SUZ 02
						<	1000	L	PAA	76CHA 01
						500			FAA	77GLU 01
						600	40	35	RTNA	75GLA 01
						1020			PAA	74CHA 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Th (ug/g)</u>					<u>Ti (ug/g) cont.</u>					
1.28	0.06		ITNA	75NAD 02		890	200		PAA	75OND 01
1.3	0.1		ITNA	78NAD 02		900	100		PAA	76CHA 01
2.4	0.2		ITNA	76BLO 01		900	180		OES	76WEW 01
2.7	0.7		EXRF	79GIA 01		920	50		NAA	76HAN 01
2.87	0.09		ITNA	77ROW 04		930		34	WXRF	82MIL 01
2.87	0.24		ITNA	79ROS 03		930			ICPES	80NAD 01
2.9	0.1		ITNA	76RAG 01		930			ITNA	75KLE 01
2.9	0.2		ITNA	85FIL 01		946	24		ICPES	81CHU 01
3	34		WXRF	82MIL 01		951	53		EXRF	79GIA 01
3			ITNA	75KLE 01		960			ICPES	80NAD 01
3	0.2		ITNA	78LAU 02		960			ICPES	80NAD 01
3.1	0.2		ITNA	75OND 01		972			ICPES	80NAD 01
3.1	0.2		ITNA	73SHE 01		973	50		PAA	74CHA 01
3.12	0.1	D	IENA	77ROW 04		980	60		ITNA	79GRE 01
3.12	0.1		IENA	77ROW 03		995	100		ITNA	78MAC 01
3.12	0.1	D	NAA	79STE 01		1000	260		ITNA	76RAG 01
3.2	35		ITNA	81GLA 03		1028	30		AA	79ROS 03
3.2			ITNA	75MIL 01		1060		35	NAA	81GLA 03
3.2	0.1		ITNA	77MAE 01		1075	100		ITNA	75OND 01
3.2	0.2		ITNA	79GRE 01		1100			ITNA	77GLU 01
3.2	0.3		ITNA	76WEW 01		1100	100		ITNA	81WAN 01
3.2	0.5		NAA	76HAN 01		1100	110		ITNA	76WEW 01
3.3	0.6		ITNA	81WAN 01		1100	200		ITNA	79FRU 01
3.4	0.3		ITNA	79FRU 01		1100	200		ITNA	73ABE 01
3.4	0.6		ITNA	73ABE 01		1160	50		XRF	79PRA 01
3.45	0.1		GAMMA	73ABE 01		1200	200		ITNA	78LAU 02
3.45	0.1		GAMMA	75OND 01		1300	200		XRF	79FRU 01
3.5	0.6		ITNA	77CAH 01		1312	150		ITNA	73SHE 01
3.65	0.49		ITNA	75RUC 01		1550	130		ITNA	82SUZ 02
4.1	0.1	12	ITNA	82SUZ 02						
4.6	0.1	12	ITNA	82SUZ 02						
4.7			DNA	75MIL 01						
<u>Ti (ug/g)</u>					<u>Tl (ng/g)</u>					
425	25		ICPES	84NAD 01		500	100		PAA	80SEG 01
680			EXRF	82KEE 01		500	100	6	PAA	82SEG 01
690	4		AA	79REI 01		512	60		PAA	74CHA 01
790			POL	74MAI 01		520	60		PAA	76CHA 01
800			AA	76WEW 01		590	60		SSMS	77PAU 01
800			ITNA	78WEA 01		600	100	6	PAA	82SEG 01
810	20	11	ICPES	85HAR 01		600	200		SSMS	77DON 01
839	172		ITNA	75NAD 02		610	37	8	SSMS	80KOP 01
840	200		ITNA	78NAD 02						
860	11		ICPES	85HAR 01		110			FAA	82GUP 02
885			ITNA	76BLO 01		300			ITNA	75MIL 01
890	35	D	TCGS	80AND 01		300			ITNA	77GLU 01
890	35		TCGS	79FAI 01		300	20		RTNA	84ODD 01
890	50	D	NAA	79STE 01		300	40		ITNA	84ODD 01
890	50		ITNA	76STE 05						
890	50		ITNA	77ROW 03						
<u>Tm (ng/g)</u>										

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>U (ug/g)</u>						<u>V (ug/g) cont.</u>				
0.98	0.078		ITNA	73SHE 01		32.9	1.7		ITNA	83NDI 01
1.1	0.08	35	RTNA	75GLA 01		33			ICPES	80NAD 01
1.19			DNA	85GAU 04		33	1		ITNA	76BLO 01
1.2	0.05		IDMS	78CAR 02		33	3		ITNA	78NAD 02
1.2	0.1		ITNA	78NAD 02		33	3		ITNA	78MAC 01
1.2	0.1		ITNA	75NAD 02		33	4		ITNA	73ABE 01
1.21			IDMS	75KLE 01		33	6		ITNA	80BUA 01
1.24	0.05		ITNA	76RAG 01		33.6			AA	78GUI 01
1.25	0.06		ITNA	82SUZ 02		33.9		11	ICPES	85HAR 01
1.26			ITNA	75KLE 01		33.9	3		PAA	74CHA 01
1.3	0.1	6	PAA	82SEG 01		34			ITNA	84CLE 01
1.3	0.1		PAA	80SEG 01		34			ICPES	80NAD 01
1.33	0.05		DNA	84GLA 02		34	3		PAA	76CHA 01
1.34	0.5		ITNA	78MAC 01		35			ITNA	78WEA 01
1.35			ITNA	78WEA 01		35	2.9		ITNA	76STE 05
1.37	0.08		ITNA	74WEA 01		35	2.9	D	NAA	79STE 01
1.4			ITNA	81WAN 01		35	2.9		ITNA	77ROW 03
1.4	0.1	6	PAA	82SEG 01		35	4		ITNA	79FRU 01
1.4	0.4		ITNA	85FIL 01		35.2	1.5		AA	79ROS 03
1.41	0.07		GAMMA	73ABE 01		35.8	3.4		ITNA	81WAN 01
1.41	0.07		GAMMA	75OND 01		35.9	0.8	11	AA	82LIN 03
1.41	0.07	D	NAA	74OND 01		36			AA	76WEW 01
1.43			DNA	75MIL 01		36	2		ITNA	79GRE 01
1.45	0.04	D	NAA	79STE 01		36	3		ITNA	75OND 01
1.45	0.04		IENA	77ROW 04		36	3	D	NAA	74OND 01
1.46	0.02		IENA	76STE 05		36	4		ITNA	76WEW 01
1.46	0.02	D	NAA	79STE 01		36	4		ITNA	73SHE 01
1.46	0.04		IENA	77ROW 03		36.2			FAA	78GUI 01
1.46	0.35		ITNA	75RUC 01		37	3		ITNA	75RIC 01
1.49	35		DNA	81GLA 03		37.6	1.4		ITNA	77MAE 01
1.5			ITNA	75MIL 01		37.9	1.7	11	AA	82LIN 03
1.5	0.1	13	PAA	81SEG 01		38	1.2		ICPES	81CHU 01
1.52	0.11		ITNA	76STE 05		38	4		XRF	79FRU 01
1.6	0.2	13	PAA	81SEG 01		40	3		ITNA	75KLE 01
1.6	0.2		NAA	76HAN 01		41	10		ITNA	76RAG 01
1.6	0.2		ITNA	79FRU 01		42	2		ITNA	82SUZ 02
2	34		WXRF	82MIL 01		43		4	AA	79REI 01
6			AA	76WEW 01		50			ITNA	77GLU 01
						50	10		XRF	79PRA 01
<u>V (ug/g)</u>						<u>W (ng/g)</u>				
24	8		EXRF	79GIA 01		450	90		ITNA	81WAN 01
30	6	35	ITNA	81GLA 03		630	60		ITNA	77MAE 01
31	4		ICPES	84NAD 01		650	150		ITNA	76RAG 01
31.5	2.6	11	AA	82LIN 03		710	70	D	NAA	79STE 01
32	34		WXRF	82MIL 01		710	70		IENA	77ROW 04
32	1.3		OES	76WEW 01		710	80		ITNA	82SUZ 02
32	4		ITNA	78LAU 02		740	300		ITNA	75RUC 01
32.5	1.5		NAA	76HAN 01						
32.7	0.6	11	ICPES	85HAR 01						
32.7	3.4		ITNA	75NAD 02						

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>W (ng/g) cont.</u>						<u>Zn (ug/g)</u>				
750			ITNA	78WEA 01		21		11	ICPES	85HAR 01
750	100		IENA	77ROW 03		30	10		ITNA	75OND 01
750	170		ITNA	75OND 01		30	10	D	NAA	74OND 01
780	80		ITNA	79GRE 01		32	3		ITNA	75NAD 02
790	170		IENA	76STE 05		32	3		XRF	79FRU 01
870	200		ITNA	77CAH 01		32	3		ITNA	78NAD 02
1900	800		ITNA	73SHE 01		32	8		SSMS	77DON 01
						33	3	9	ITNA	78LAU 02
<u>Y (ug/g)</u>						34			XRF	75KLE 01
6.6		11	ICPES	85HAR 01		34		4	AA	79REI 01
7			AA	82GUP 02		34	1		EXRF	81KIN 01
7	1		XRF	79PRA 01		34	9		ITNA	77CAH 01
7.4		34	WXRF	82MIL 01		34	17		ITNA	76WEW 01
7.6	0.81		OES	76WEW 01		34.9	1.6	11	AA	82LIN 03
7.9	0.6		EXRF	79GIA 01		35	2	12	ITNA	82SUZ 02
8			OES	82GUP 02		35	5		ITNA	77JER 01
8.3	0.2	11	ICPES	85HAR 01		35.7	9.9		EXRF	79GIA 01
						36			ICPES	80NAD 01
<u>Yb (ng/g)</u>						36	0.6		RTNA	74ORV 01
550	40		ITNA	73SHE 01		36.6	1.4		EXRF	73SPA 01
550	80		ITNA	76WEW 01		36.9	1.1	11	AA	82LIN 03
670	20		ICPES	81CHU 01		37			AA	76WEW 01
690	40		ITNA	78NAD 02		37	3		PAA	76CHA 01
690	40		ITNA	75NAD 02		37	3		PAA	77JER 01
700			AA	82GUP 02		37	3		XRF	79PRA 01
700	100		ITNA	78LAU 02		37	3		ITNA	79FRU 01
700	100		ITNA	75OND 01		37	6		IENA	77ROW 04
740	90		ITNA	77CAH 01		37	10		NAA	76HAN 01
760	30		ITNA	76RAG 01		37.2	17.4		ITNA	75RUC 01
780	70		ITNA	75RUC 01		37.5	2.8		PAA	74CHA 01
790	20		RTNA	84ODD 01		38		34	WXRF	82MIL 01
800			ITNA	75MIL 01		38	5		SSMS	77PAU 01
810	20		ITNA	77MAE 01		38.1	0.8		AF	75EPS 01
810	40		ITNA	84ODD 01		38.1	1.4		RTNA	77JER 01
840	70	D	NAA	79STE 01		38.4	0.9		AA	74RAI 01
840	70	5	ITNA	77ROW 04		38.4	1		AA	75EPS 01
840	70		ITNA	77ROW 03		38.5			AA	78GUI 01
880	90	5	ITNA	77ROW 04		39			ICPES	80NAD 01
910	70		OES	76WEW 01		39			EXRF	82KEE 01
950	50		IENA	77ROW 04		39	1		FAA	74TAL 01
1000	200		NAA	76HAN 01		39	1	7	AA	73TAL 01
1000	200		ITNA	78MAC 01		39	2	11	ICPES	85HAR 01
1030	80		ITNA	82SUZ 02		39	2	12	ITNA	82SUZ 02
1200	200		ITNA	81WAN 01		39	3	6	PAA	82SEG 01
						39	3		PAA	80SEG 01
						39	6		ITNA	77ROW 03
						39	6	D	NAA	79STE 01
						39	6	D	ITNA	77ROW 04
						40	1.2		ICPES	81CHU 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Zn (ug/g) cont.</u>					
40	2		ICPES	84NAD 01	
40.8	4		ITNA	81WAN 01	
42			ITNA	77GLU 01	
43	2		ITNA	76RAG 01	
45	17		OES	76WEW 01	
50	10		ITNA	78LAU 02	
52	4		ITNA	78MAC 01	
58	7		ITNA	77MAE 01	
<u>Zr (ug/g)</u>					
1.56	0.14		PAA	74CHA 01	
16	2		PAA	76CHA 01	
25	0.75		ICPES	81CHU 01	
25	3		OES	76WEW 01	
28	24		ITNA	76RAG 01	
33	4		EXRF	79GIA 01	
38	34		WXRF	82MIL 01	
40	4	9	ITNA	78LAU 02	
41			ITNA	75MIL 01	
45			ITNA	75KLE 01	
46			AA	76WEW 01	
85	9	12	ITNA	82SUZ 02	
90	10	12	ITNA	82SUZ 02	

TABLE 1632A-1: COMPILED DATA FOR NBS SRM 1632A TRACE ELEMENTS IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		AA		NAA		ICPES		XRF		OTHER METHODS		
		Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	
ASH	%	---		21.84 ± 0.15 (5)		21.8	21.7 - 22.0	22.0	(1)	---	---	---	---	---	---	21.9	(2)	CB	---	
Ag	ug/g	---		300 (1)		---	---	300	(1)	---	---	---	---	---	---	---	---	---	---	
Al	%	3.07		2.95 ± 0.10 (25)		2.97	2.74 - 3.10	2.92 ± 0.14 (5)	2.97 ± 0.08 (12)	2.98 ± 0.08 (4)	2.88	(2)	2.96	(2)	TGGS	3.33	(1)	CPAA		
As	ug/g	9.3 ± 1.0		9.2 ± 0.5 (27)		9.21	7.6 - 10.2	9.3 ± 0.5 (10)	9.3 ± 0.7 (13)	8.88 (1)	7.8	(2)	9.9	(1)	PAA	9.27	(1)	AF		
Au	ug/g	---		3.0 (1)		---	---	---	(1)	---	---	---	---	---	---	---	---	---	---	
B	ug/g	---		53.2 ± 1.5 (7)		53	50.9 - 55	---	3.0	52	(1)	---	53.1 ± 1.5 (5)	TGGS	55	(1)	OES			
Ba	ug/g	---		120 ± 15 (15)		120	97 - 150	---	122 ± 17 (11)	111 ± 9 (3)	125	(1)	---	---	---	---	---	---	---	
Be	ug/g	---		1.61 ± 0.11 (5)		1.63	1.48 - 1.73	1.60 ± 0.11 (4)	---	---	---	---	1.7	(1)	OES	---	---	---		
Bi	ug/g	---		< 1		---	---	---	---	---	---	1.1	---	---	---	---	---	---	---	
Br	ug/g	---		4.1 ± 2 (16)		4.2	3.8 - 4.9	---	4.1 ± 2 (14)	---	4.2	(1)	4.3	(1)	ISE	---	---	---		
C	%	---		64.4 ± 3.9 (5)		62.7	61.3 - 71	---	---	---	---	---	62.0 ± 0.7 (3)	CB	68	(2)	TGGS			
C-Fixed	%	---		43 (1)		---	---	43	(1)	---	---	---	---	---	---	---	---	---		
Ce	ug/g	---		2410 ± 170 (20)		2400	2100 - 2700	2400 ± 140 (4)	2430 ± 180 (9)	2470 ± 190 (4)	2300	(1)	2100	(1)	PAA	2400	(1)	TGGS		
Cd	ug/g	170 ± 20		178 ± 23 (6)		170	150 - 210	170 ± 10 (3)	200	(1)	---	---	180	(2)	TGGS	---	---	---		
Ce	ug/g	30		29 ± 2 (16)		28.5	25.7 - 32	---	29 ± 2 (12)	29	(2)	28.8	(2)	---	---	---	---	---		
Cl	ug/g	---		756 ± 30 (16)		766	700 - 800	---	771 ± 17 (7)	730	(2)	722	(2)	IC	775	(2)	TGGS			
Cl	ug/g	---		---		---	---	---	---	---	---	---	770	(2)	ISE	---	---	---		
Co	ug/g	6.8		6.7 ± 0.4 (23)		6.6	5.86 - 7.5	6.8 ± 0.5 (5)	6.7 ± 0.5 (15)	6.6	(2)	6.0	(1)	---	---	---	---	---		
Cr	ug/g	34.3 ± 1.5		34 ± 2 (27)		33.8	30 - 40	33 ± 4 (7)	34.0 ± 1.6 (14)	31.6	(2)	37 ± 3 (3)	31	(1)	OCFES	39	(1)	AE&AF		
Cs	ug/g	2.4		2.3 ± 0.2 (13)		2.3	1.9 - 2.5	---	2.26 ± 0.20 (12)	---	2.26	(1)	2.5	(1)	---	---	---	---	---	
Cu	ug/g	16.5 ± 1		15.9 ± 0.8 (18)		16	14 - 17.2	16.1 ± 0.7 (10)	15.4	(1)	17 ± 2 (4)	15.8 ± 1.2 (3)	14	(1)	DCPES	---	---	---		
Dy	ug/g	---		2.06 ± 0.14 (10)		2.11	1.83 - 2.2	---	2.05 ± 0.15 (9)	2.1	(1)	---	---	---	---	---	---	---		
Er	ug/g	---		0.91 (1)		---	---	---	---	0.91 (1)	---	---	---	---	---	---	---	---		
Fu	ug/g	54.0		520 ± 40 (15)		510	460 - 610	---	530 ± 40 (14)	490	(1)	---	---	---	140 ± 60 (4)	ISE	210	(1)	IC	
F	ug/g	---		160 ± 50 (8)		176	84 - 210	---	---	---	---	---	178	(1)	SSMS	170	(2)	CPAA		
F	ug/g	---		---		---	---	---	---	---	---	---	2.3 ± 0.6 (3)	TGGS	---	---	---	---		
Fe	%	1.11 ± 0.02		1.11 ± 0.03 (28)		1.11	1.03 - 1.17	1.13 ± 0.04 (6)	1.11 ± 0.03 (15)	1.10 ± 0.02 (5)	1.07	(1)	1.14	(2)	TGGS	---	---	---		
Ga	ug/g	8.49		8.0 ± 0.4 (7)		8.0	7.2 - 8.5	8.2 (1)	8.0 ± 0.3 (4)	7.8	(2)	---	---	---	---	---	---	---		
Gd	ug/g	---		2.6 ± 0.6 (6)		2.4	1.9 - 3.4	---	3.4	(1)	2.4	(1)	3.0	(1)	---	---	---	---		
Ge	ug/g	---		2.5 (1)		---	---	---	---	---	2.5	(1)	2.5	(1)	---	---	---	---		
H	%	---		4.1 ± 0.4 (5)		4.17	3.68 - 4.59	---	---	---	---	---	4.31 ± 0.24 (3)	CB	3.69	(2)	TGGS			
H2O-	%	---		2.2 ± 0.5 (5)		2.6	1.6 - 2.6	---	---	---	---	---	2.6	(2)	MPDES	2.1	(2)	GRAV		
Hf	ug/g	1.6		1.62 ± 0.15 (11)		1.65	1.43 - 1.9	---	1.62 ± 0.15 (11)	---	---	---	1.62	(1)	F0	---	---	---		
Hg	ug/g	130 ± 30		136 ± 19 (10)		129	118 - 170	136 ± 20 (5)	137 ± 22 (4)	---	---	---	---	---	---	---	---	---		
Ho	ug/g	---		360 (2)		---	340 - 380	---	340	(1)	380	(1)	134	(1)	AF	---	---	---		
I	ug/g	---		1.80 ± 0.15 (4)		1.77	1.63 - 2.0	---	1.80 ± 0.15 (4)	---	---	---	---	---	---	---	---	---		
In	ug/g	---		38 ± 2 (5)		36	36 - 40.5	---	38 ± 2 (5)	---	---	---	4150	(2)	TGGS	---	---	---		
K	ug/g	---		4110 ± 200 (20)		4100	3700 - 4523.	4175 ± 50 (4)	4090 ± 200 (10)	4310 ± 370 (4)	3700	(1)	2.7	(1)	GAMMA	---	---	---		
K-40	pci/g	---		2.7 (1)		---	---	---	---	---	---	---	35	(1)	OES	47	(1)	CPAA		
La	ug/g	---		15 ± 2 (18)		15	10.9 - 19	---	14 ± 3 (15)	15.1 ± 0.6 (3)	19	(1)	---	---	---	---	---	---		
Li	ug/g	---		39 ± 6 (4)		36.2	35 - 47	36.2 (1)	37 (1)	---	---	---	---	---	---	---	---	---		
Lu	ug/g	---		170 ± 15 (12)		174	134 - 190	---	176 ± 7 (10)	150	(1)	---	---	---	---	---	---	---		
Mg	ug/g	---		1150 ± 225 (13)		1052	870 - 1714	1100 ± 150 (4)	1425 ± 125 (4)	980 ± 80 (4)	910	(1)	DCPES	1774	(1)	CPAA	29	(1)	TGGS	
Mn	ug/g	28 ± 2		29 (29)		26 - 34	29.3 ± 1.8 (8)	29.8 ± 2.2 (12)	30 ± 3 (4)	24	(2)	26	(1)	AE&AF	28	(1)	ESR			
Mn	ug/g	---		---		---	---	---	---	---	---	---	---	---	---	---	---	---		

TABLE 1632A-1: COMPILED DATA FOR NBS SRM 1632A TRACE ELEMENTS IN COAL (cont.)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		AA		NAA		ICPES		XRF		OTHER METHODS		
		Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	
Mo	ug/g	---		3.85 $\pm$ 0.04	(2)	---		2 - 5.7		---		---		5.7 $\pm$ (1)	2.0 $\pm$ (1)	---		---		
N	%	---		1.25 $\pm$ 0.04	(7)	1.27		1.19 - 1.30		---		---		---		1.24 $\pm$ (2)	TCGS	1.28 $\pm$ (1)	POT	
N	%	---		---		---		---		---		---		---		1.72 $\pm$ (1)	IC	1.19 $\pm$ (1)	CHEM	
N	%	---		828 $\pm$ 77	(25)	825		680 - 1000		840 $\pm$ 36	(3)	800 $\pm$ 80	(15)	856 $\pm$ 54	(4)	882 $\pm$ (2)	915 $\pm$ (1)	1.27 $\pm$ (1)	TITR	
Nb	ug/g	---		4.0	(1)	---		---		---		---		---		4.0 $\pm$ (1)	CPAA	---	CB	
Nd	ug/g	---		12 $\pm$ 2	(8)	11.8		10 - 15.6		---		13 $\pm$ 2	(5)	13 $\pm$ (1)	11 $\pm$ (1)	11.8 $\pm$ (1)	TCGS	---	---	
Ni	ug/g	---		18.5 $\pm$ 2.0	(21)	19		15.7 - 23		18.6 $\pm$ 1.5	(10)	21	(2)	17.3 $\pm$ 1.6	(4)	19 $\pm$ 3	(3)	26 $\pm$ (1)	PAA	19 $\pm$ (1) AEAF
Ni	ug/g	---		18.8 $\pm$ 0.8	(3)	18.4		18.31 - 19.8		---		---		---		16 $\pm$ (1)	DCPES	---	---	
O	0	---		250 $\pm$ 40	(6)	205		85 - 285		280	(1)	---		190 $\pm$ 90	(5)	240 $\pm$ (2)	---	18.8 $\pm$ 0.8	(3)	14NAA
P	ug/g	---		12.2 $\pm$ 1.4	(20)	12.1		8.3 - 15.3		12.4 $\pm$ 0.7	(11)	---		9.6 $\pm$ 2.5	(3)	13 $\pm$ 4	(4)	11.2 $\pm$ (1)	IDMS	12.9 $\pm$ (1) POT
Pb	ug/g	---		0.58 $\pm$ 0.19	(3)	0.5		0.449 - 0.80		---		---		---		12 $\pm$ (1)	DCPES	---	---	
Pb-210	pCi/g	---		0.50	(1)	---		---		---		---		---		0.474 $\pm$ (2)	NH	0.80 $\pm$ (1)	GAMMA	
Po-210	pCi/g	---		3.15	(2)	---		3.0 - 3.3		---		---		---		0.50 $\pm$ (1)	RAS	---	---	
Pr	ug/g	---		0.41	(1)	---		---		---		---		---		---		---		---
Ra-226	pCi/g	---		31		30 $\pm$ 2	(13)	29		26.9 - 34		29.2 $\pm$ 1.6	(10)	---		31.5 $\pm$ (2)	29 $\pm$ (1)	0.41 $\pm$ (1)	GAMMA	
Rb	ug/g	---		1.55 $\pm$ 0.05	(13)	1.57		1.48 - 1.62		---		1.5 $\pm$ (2)		---		1.54 $\pm$ 0.07	(4)	1.42 $\pm$ (2)	IC	
S	%	1.64		5.87 $\pm$ 0.22	(9)	600		460 - 690		587 $\pm$ 23	(3)	600 $\pm$ 50	(13)	63.3 $\pm$ 0.3	(15)	5.7 $\pm$ (1)	1000 $\pm$ (1)	1.59 $\pm$ (2)	CPAA	
S	%	---		2.4 $\pm$ 0.3	(16)	600		5.7 - 6.9		---		6.3 $\pm$ 0.3	(15)	5.7 $\pm$ (1)		5.8 $\pm$ (2)	1.59 $\pm$ (2)	DCPES	---	
Sb	ug/g	6.3		6.3 $\pm$ 0.3	(17)	6.2		5.7 - 6.9		2.4 - 3.12		2.7 $\pm$ 0.2	(6)	2.8 $\pm$ 0.2	(10)	2.4 $\pm$ (1)	AF	2.55 $\pm$ (1)	FAC	
Sc	ug/g	2.6 $\pm$ 0.7		5.87 $\pm$ 0.22	(9)	5.912		5.5 - 6.21		5.80 $\pm$ 0.37	(3)	---		5.89 $\pm$ 0.20	(3)	5.92 $\pm$ (2)	TCGS	5.92 $\pm$ (2)	TCGS	
Se	ug/g	---		4 $\pm$ 4	(3)	2.3		2.5 - 2.8		---		2.6 $\pm$ 0.2	(12)	2.6 $\pm$ (1)		2.1 $\pm$ (2)	TCGS	---	---	
Si	ug/g	---		85 $\pm$ 6	(10)	83.6		76.4 - 95.5		---		84 $\pm$ 6	(8)	72 $\pm$ (2)		90 $\pm$ (1)		---		
Sm	ug/g	---		420 $\pm$ 40	(8)	400		360 - 460		---		420 $\pm$ 40	(8)	---		---		---		
Sn	ug/g	---		311 $\pm$ 17	(9)	310		290 - 330		---		312 $\pm$ 18	(8)	300 $\pm$ (1)		---		---		
Sr	ug/g	---		500	(1)	---		500		---		4.49 $\pm$ 0.22	(14)	4.4 $\pm$ (1)		5.0 $\pm$ (1)		---		
Ta	ug/g	4.5 $\pm$ 0.1		4.5 $\pm$ 0.2	(16)	4.48		4.2 - 5.0		---		---		---		0.499 $\pm$ (1)	NH	---	---	
Tb	ug/g	---		0.499	(1)	---		---		---		---		---		0.452 $\pm$ (1)	NH	---	---	
Te	ug/g	---		0.452	(1)	---		0.40 - 0.484		---		---		---		0.484 $\pm$ (1)	NH	0.400 $\pm$ (1)	GAMMA	
Th	ug/g	---		1750		1630 $\pm$ 130	(21)	1620	1310 - 1900	1760	(1)	1630 $\pm$ 70	(8)	1540 $\pm$ 160	(5)	1830 $\pm$ 280	(4)	1850 $\pm$ (2)	COLOR	1515 $\pm$ (2) TGS
Th-228	pCi/g	---		< 1		---		---		---		---		---		< 1		---		
Th-230	pCi/g	---		1.26 $\pm$ 0.08	(23)	1.28		1.1 - 1.45		---		1.26 $\pm$ 0.08	(22)	1.3 $\pm$ (1)	1.0 $\pm$ (1)	0.448 $\pm$ (1)	NH	---	---	
Th-232	pCi/g	---		0.448	(1)	---		---		---		---		---		0.0228 $\pm$ (1)	NH	---	---	
Ti	ug/g	---		0.0228	(1)	---		---		---		---		---		0.444 $\pm$ (1)	NH	---	---	
Tl	ug/g	---		0.446	(1)	---		---		---		---		---		44.5 $\pm$ (2)	47 $\pm$ (2)	AEAF	---	
Tm	ug/g	---		790	(2)	380		380 - 400		380	(1)	400	(1)	400	(1)	400	(1)	400	(1)	
U	ug/g	1.28 $\pm$ 0.02		880 $\pm$ 90	(6)	790		780 - 1000		---		880 $\pm$ 90	(6)	9.0 $\pm$ (2)	9.5 $\pm$ (1)	0.448 $\pm$ (1)	NH	---	---	
U-234	ug/g	---		9.2 $\pm$ 0.8	(3)	9.5		8.3 - 9.7		---		9.0 $\pm$ (2)		9.5 $\pm$ (1)		0.448 $\pm$ (1)	NH	---	---	
U-235	ug/g	---		1.08 $\pm$ 0.09	(11)	1.1		0.9 - 1.2		---		1.10 $\pm$ 0.08	(10)	0.9 $\pm$ (1)	---	0.444 $\pm$ (1)	NH	---	---	
U-238	ug/g	4.4 $\pm$ 3		4.4 $\pm$ 2	(27)	4.4		39 - 49.6		4.4 $\pm$ 3	(10)	4.4 $\pm$ 3	(11)	4.2 $\pm$ 2	(3)	44.5 $\pm$ (2)	47 $\pm$ (2)	AEAF	---	
V	ug/g	---		27.2 $\pm$ 1.4	(19)	27.6		24.3 - 30		26.8 $\pm$ 1.5	(9)	28.2 $\pm$ 2.3	(5)	27.7 $\pm$ 0.5	(3)	27.3 $\pm$ 1.2	(3)	57 $\pm$ (1) PAA	---	
W	ug/g	---		53 $\pm$ 5	(3)	55		47 - 57		47	(1)	47	(1)	55	(1)	57 $\pm$ (1) PAA	---	---	---	

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>									
<	1500		ITNA	86GLA 01	9.21	0.15		ITNA	86GLA 01
<	3000	L	WXRF	82MIL 01	9.27			AF	82WIL 01
300			ITNA	79CAH 01	9.34			FAA	82WIL 01
					9.4	1.3		ITNA	830BR 01
					9.4	1.3		ITNA	79CAH 01
					9.5		11	HAA	82CRO 03
<u>Al (%)</u>									
2.74		34	AA	83BET 01	9.54	0.64		HAA	82NAD 01
2.8	0.27		CPXRF	80KIR 01	9.6		11	FAA	82EBD 02
2.81	0.02	34	AA	83BET 01	9.7	0.3		ITNA	85GAU 04
2.82	0.13		ITNA	83JER 01	9.8		11	FAA	82EBD 02
2.86	0.03		ICPES	85HAR 01	9.8		11	HAA	82CRO 03
2.9	0.05		TCGS	79AND 01	9.9	0.5		PAA	80GER 01
2.9	0.12		ITNA	82JER 01	10.2	0.4		ITNA	81JIN 01
2.9	0.3		ITNA	80GER 01	11	2		ITNA	80GER 01
2.91	0.05		ITNA	86GLA 01	11.1	1.3		ITNA	85SUN 01
2.93	0.03		AA	82NAD 02					
2.95	0.04		XRF	79CAH 01					
2.96	0.14		ITNA	85SUN 01					
2.97	0.04		IENA	85GLA 02	21.7			UU	85SHI 01
2.99	0.06		ITNA	830BR 01	21.7			UU	82EBD 02
2.99	0.14		ITNA	84GLA 02	21.8		34	CB	82MIL 01
3	0.01		ICPES	84NAD 01	22		11	AA	84NAK 01
3	0.05		ICPES	82NAD 02	22			CB	82KAM 01
3	0.1		AA	83RAP 01					
3.01	0.13		TCGS	79FAI 01					
3.01	0.13	D	TCGS	80GER 01					
3.01	0.13	D	TCGS	80AND 01	<	8		ITNA	86GLA 01
3.0576	0.0106		ICPES	85PEA 01	<	50	L	ITNA	79CAH 01
3.06	0.08		ITNA	85AKA 01	3	1		ITNA	80KOS 01
3.07	0.13		ITNA	80GAR 01					
3.1			ITNA	84CLE 01					
3.1	0.06		AA	82KAM 01					
3.33			CPAA	83BIR 01	22	3		ICPES	81NAD 01
9.47			EXRF	82EBD 02	50.9	0.5		TCGS	79AND 01
					52	19		ITNA	82SCH 05
					52.7	1.8		TCGS	79FAI 01
					53	2		TCGS	80AND 01
6.4	2.1		CPXRF	80KIR 01	53		2	D	TCGS
7.6		11	FAA	82EBD 02	54				TCGS
8.3	1		ITNA	83JER 01	55			OES	83MIL 01
8.4		11	FAA	82EBD 02	55		4	35	TCGS
8.7	0.2		ITNA	82JER 01					81GLA 04
8.7	0.3		HAA	85LIN 02					
8.88	1.22		ICPES	81NAD 01					
9		11	FAA	82EBD 02	97	7		ITNA	84TU 01
9	0.4		ITNA	80KOS 01	100	13		ITNA	81JIN 01
9	0.4		ITNA	81KUL 01	102	1		ICPES	84NAD 01
9	0.9		ITNA	84CHA 02	102	6		ITNA	84SUZ 02
9.2		34	WXRF	82MIL 01	112	3		ICPES	85HAR 01
9.2	0.5		AA	83RAP 01	116	7	5	ITNA	80TOU 01
9.2	1.2		ITNA	84TU 01	119	27		ITNA	85SUN 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ba (ug/g) cont.</u>					<u>C-Fixed (%)</u>				
120	10		ICPES	82NAD 02	43		11	AA	84NAK 01
122	11		ITNA	80GER 01					
125		34	WXRF	82MIL 01					
126	11		ITNA	82JER 01					
132	7		ITNA	85AKA 01	2100	100		PAA	80GER 01
136	16		ITNA	85GAU 04	2160	130		ITNA	82JER 01
138	20		ITNA	79CAH 01	2200	300		ITNA	84GLA 02
150	26		ITNA	80GAR 01	2240	30		ICPES	85HAR 01
170	15		ITNA	84CHA 02	2300	30		AA	82NAD 02
					2300	100		XRF	79CAH 01
<u>Be (ug/g)</u>					2300	200		AA	82KAM 01
					2340	270		ITNA	85SUN 01
1.48	0.08	11	AA	82LIN 03	2400	30		ICPES	82NAD 02
1.53	0.04	11	AA	84NAK 01	2400	100	34	AA	83BET 01
1.63	0.1	11	AA	82LIN 03	2400	200	D	TCGS	80AND 01
1.7			OES	83MIL 01	2400	200	D	TCGS	79AND 01
1.73	0.15	11	AA	82LIN 03	2400	200	D	TCGS	80GER 01
					2400	200		ITNA	80GER 01
<u>Bi (ug/g)</u>					2400	200		TCGS	79FAI 01
					2450	140		ITNA	83OBR 01
<	1	L	WXRF	82MIL 01	2600		34	AA	83BET 01
					2600			ITNA	84CLE 01
<u>Br (ug/g)</u>					2600	100		ICPES	84NAD 01
					2600	200		ITNA	85AKA 01
38	2		ITNA	83JER 01	2652.65			ICPES	85PEA 01
38.3	4.9		ITNA	84CHA 02	2700	175		ITNA	80GAR 01
39	3		ITNA	84SUZ 02	46500			EXRF	82EBD 02
39.6	1.9		ITNA	83OBR 01					
40	2		ITNA	84GLA 02					
40	2.3		ITNA	82JER 01					
41	4		ITNA	80GER 01	150	30		TCGS	79AND 01
42		34	WXRF	82MIL 01	160		34	FAA	83BET 01
42	1		ITNA	86GLA 01	170	60	34	FAA	83BET 01
43			ISE	81NAD 01	180	40		AA	83RAP 01
43	0.6		ITNA	81JIN 01	200	50		ITNA	80KOS 01
43	7		ITNA	79CAH 01	210	30		TCGS	79FAI 01
43.1	1.1		ITNA	85SUN 01	210	30	D	TCGS	80GER 01
44.5	2.7	5	IENA	79GLA 02	210	30	D	TCGS	80AND 01
44.9	0.9	5	IENA	79GLA 02					
50	4	5	ITNA	80TOU 01					
60			ISE	83NAD 01					
<u>C (%)</u>					25.7	7.2		CPXRF	80KIR 01
					26	1.7		ITNA	79CAH 01
					26	3		ITNA	85AKA 01
61.3		14	CB	85NAD 01	27	4		ITNA	81KUL 01
62.08	0.1	14	CB	85NAD 01	27	4		ITNA	80KOS 01
62.7	0.06		CB	80SCH 02	28	2		ITNA	84SUZ 02
65	4		TCGS	79AND 01	28.5	0.3		ITNA	81JIN 01
71	4	D	TCGS	80AND 01	28.5	0.4		ICPES	82CRO 01
71	4		TCGS	79FAI 01	29.7	0.9		ICPES	83MAH 05
71	4	D	TCGS	80GER 01	30			ITNA	85GRE 02

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ce (ug/g) cont.</u>						<u>Co (ug/g) cont.</u>				
30.2	1.2		ITNA	85SUN 01		7.3	1.3	11	AA	84NAK 01
30.8	0.5		ITNA	84TU 01		7.5			ITNA	84CLE 01
31.1	3.4		ITNA	80GAR 01		7.5	0.4		ITNA	79CAH 01
31.8	1.5		ITNA	85GAU 04		8.5	1		ITNA	83JER 01
32	34		WXRF	82MIL 01						
32			ITNA	80GER 01						
<u>Cl (ug/g)</u>						3.4	0.2		AA	83RAP 01
700	10		IC	85GEN 01		12.8	2		ICPES	84NAD 01
700	100		XRF	79CAH 01		26	3		ITNA	81KUL 01
704	42		ITNA	85SUN 01		26	6		ITNA	80KOS 01
743	46		IC	83NAD 01		30	2		ICPES	85HAR 01
750	15		ITNA	86GLA 01		30.9	0.6		ITNA	84TU 01
750	60		ITNA	84GLA 02		31			DCPES	85MCC 02
760	34		WXRF	82MIL 01		31.2	3.7		ITNA	84CHA 02
766			TCGS	79AND 01		31.8	3.7	11	AA	82LIN 03
770			ISE	83NAD 01		32	1.9		AA	82KAM 01
770	24		ITNA	82JER 01		33	3		ITNA	85AKA 01
770	48		ISE	81NAD 01		33.3			ICPES	81MER 03
776	20		ITNA	83JER 01		33.3	1.6		ITNA	81JIN 01
776	36		ITNA	83OBR 01		33.4	1.5		ITNA	85SUN 01
784	17		TCGS	79FAI 01		33.8			FAA	83BET 01
784	17	D	TCGS	80GER 01		33.8	2		ITNA	83JER 01
784	17	D	TCGS	80AND 01		34	2		ITNA	80GER 01
800	70		ITNA	80GER 01		34	3.6		ITNA	82JER 01
897	23		ITNA	80GAR 01		34	4		XRF	85HAR 01
						34.4	2.4		ITNA	84SUZ 02
<u>Co (ug/g)</u>						34.7	2		ITNA	86GLA 01
						34.8	6	34	FAA	83BET 01
4.4	0.3		ICPES	85HAR 01		35			ITNA	84CLE 01
5.86	0.21		ITNA	81JIN 01		35.6	1		ITNA	85GAU 04
6	34		WXRF	82MIL 01		36	2		ITNA	79CAH 01
6.1			ITNA	84TU 01		36	3.5		CPXRF	80KIR 01
6.1	0.4		ITNA	84SUZ 02		36	6		ITNA	80GAR 01
6.3	1.3	34	FAA	83BET 01		36.9	1	11	AA	84NAK 01
6.4	0.6		AA	83RAP 01		36.9	3.3	11	AA	82LIN 03
6.5			ICPES	81MER 03		39	8.8		AE+AF	82GOL 01
6.5	0.2		ITNA	80GER 01		40			WXRF	82MIL 01
6.5	0.5		ITNA	81KUL 01						
6.56	0.22		ITNA	85GAU 04						
6.6	0.3		ITNA	86GLA 01						
6.6	0.5	5	ITNA	80TOU 01		1.9	0.6		ITNA	79CAH 01
6.6	1.1		ITNA	80GAR 01		2	0.3		ITNA	80GER 01
6.7	0.1		ICPES	83MAH 05		2	0.32		ITNA	84CHA 02
6.7	0.9	11	AA	84NAK 01		2.12	0.13		ITNA	84GIB 01
6.71	0.11		ITNA	85SUN 01		2.2	0.1		ITNA	85AKA 01
6.8	0.3		ITNA	80KOS 01		2.27	0.15		ITNA	85GAU 04
7	0.4		ITNA	85AKA 01		2.3	0.11		ITNA	81JIN 01
7.1	0.5		ITNA	84CHA 02		2.33	0.07		ITNA	85SUN 01
7.3	34		FAA	83BET 01		2.4	0.2		ITNA	81KUL 01
<u>Cs (ug/g)</u>										

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cs (ug/g) cont.</u>										
2.4	0.8		ITNA	80GAR 01		410	50		ITNA	85AKA 01
2.47	0.12		ITNA	84TU 01		460	20		ITNA	830BR 01
2.5		34	WXRF	82MIL 01		490	10		ICPES	82CRO 01
2.5	0.2		IENA	80KOS 01		490	50		ITNA	84CHA 02
2.9	1.4		ITNA	84SUZ 02		500	40		ITNA	84SUZ 02
						510	30		ITNA	81JIN 01
						510	70		ITNA	86GLA 01
						510	82		ITNA	80GAR 01
						540	40		ITNA	85GAU 04
14			DCPES	85MCC 02		540	80		ITNA	80KOS 01
14.5	0.5		XRF	85HAR 01		540	80		ITNA	81KUL 01
15	0.45		AA	82KAM 01		540	30		ITNA	79CAH 01
15.3	0.9	11	AA	84NAK 01		550	30		ITNA	80GER 01
15.4	1.9		ITNA	84SUZ 02		550	30		ITNA	85GRE 02
15.5	0.7		ICPES	85HAR 01		600			ITNA	85SUN 01
15.7	1.6	11	AA	84NAK 01		610	30		ITNA	82LIN 03
15.8	0.6	11	AA	82LIN 03						
15.9	0.4		AA	79CAH 01						
16	2.1		CPXRF	80KIR 01						
16.1	0.6		AA	83RAP 01		84	8		ISE	81NAD 01
16.3		34	FAA	83BET 01		95			ISE	83KNA 01
16.3	0.2		ICPES	83MAH 05		164			CPAA	83BIR 01
16.4			ICPES	81MER 03		176	14		CPAA	85CLA 02
16.6	0.6	11	AA	82LIN 03		177			ISE	82MCG 01
16.7	2	34	FAA	83BET 01		178			SSMS	85CLA 02
17		34	WXRF	82MIL 01		200			ISE	83NAD 01
17.2	3		FAA	80LAN 01		210	10		IC	83NAD 01
19.8	1.5		ICPES	84NAD 01						
<u>Dy (ug/g)</u>										
<	2.5	L	WXRF	82MIL 01		0.89	0.03		ICPES	84NAD 01
1.83	0.11		ITNA	830BR 01		1.00			ITNA	84CLE 01
1.98	0.53	5	ITNA	80TOU 01		1.03	0.14		ITNA	84CHA 02
2	0.1		ITNA	82JER 01		1.07	0.01		ICPES	85HAR 01
2.1	0.1		ICPES	82CRO 01		1.07	0.03		XRF	79CAH 01
2.11	0.11		ITNA	86GLA 01		1.08	0.02		ITNA	83JER 01
2.13	0.15		ITNA	85SUN 01		1.08	0.08	34	AA	83BET 01
2.2	0.1		ITNA	79CAH 01		1.09	0.08		ITNA	84SUZ 02
2.2	0.1		ITNA	84SUZ 02		1.10			AA	83BET 01
2.2	0.3		ITNA	80GER 01		1.10	0.02		ITNA	81JIN 01
2.56	0.26		ITNA	80GAR 01		1.10	0.02		ICPES	83MAH 05
						1.10	0.06		ITNA	81KUL 01
						1.10	0.1		ITNA	85AKA 01
<u>Er (ug/g)</u>										
<	3	L	WXRF	82MIL 01		1.10	0.3		ITNA	82JER 01
0.91	0.05		ICPES	82CRO 01		1.104	0.01		ITNA	84TU 01
						1.11	0.02		AA	82NAD 02
						1.11	0.06	D	TCGS	80AND 01
						1.11	0.06		TCGS	79FAI 01
						1.11	0.06	D	TCGS	80GER 01
						1.1114	0.028		ICPES	85PEA 01
						1.12	0.01		ICPES	82NAD 02
						1.12	0.01		ITNA	80KOS 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Fe (%) cont.</u>						<u>Hf (ug/g)</u>				
1.12	0.09		ITNA	80GAR 01		1.43	0.05		ITNA	84TU 01
1.125			ICPES	81MER 03		1.44	0.09		ITNA	81JIN 01
1.13	0.02		ITNA	85SUN 01		1.46	0.07		ITNA	85SUN 01
1.14	0.01		AA	79CAH 01		1.55	0.08		ITNA	80GER 01
1.14	0.04		ITNA	85GAU 04		1.55	0.11		ITNA	84SUZ 02
1.14	0.05		ITNA	86GLA 01		1.65	0.15		ITNA	85GAU 04
1.16	0.03		ITNA	80GER 01		1.68	0.06		ITNA	86GLA 01
1.16	0.37		ITNA	79CAH 01		1.7	0.1		ITNA	79CAH 01
1.17	0.04		AA	83RAP 01		1.7	0.2		ITNA	85AKA 01
1.17	0.04		TCGS	79AND 01		1.8	0.3		ITNA	80GAR 01
1.2	0.02		AA	82KAM 01		1.9	0.3	5	ITNA	80TOU 01
6.78			EXRF	82EBD 02						
<u>Ga (ug/g)</u>						<u>Hg (ng/g)</u>				
7.2	2.5		CPXRF	80KIR 01		90	15		ITNA	84CHA 02
7.84	0.6		ITNA	830BR 01		118	14		CVAA	80NAD 01
8	0.8		ITNA	80GER 01		120	50		ITNA	80KOS 01
8.2			FAA	85XIA 01		122	6		CVAA	85DUM 02
8.4	34		WXRF	82MIL 01		129	10		RTNA	84DRA 01
8.5	0.8		ITNA	79CAH 01		129	20		RTNA	84DEL 01
						134.1			AF	82WIL 01
						134.1	3.1		CVAA	82EBD 01
<u>Gd (ug/g)</u>						135	18		CVAA	82D00 01
1.9	0.2		TCGS	79AND 01		169	65		ITNA	84SUZ 02
1.95	0.03	D	TCGS	80GER 01		170	20		CVAA	81NAD 01
1.95	0.03		TCGS	79FAI 01		210	90		ITNA	81KUL 01
2.4	0.2		ICPES	82CRO 01						
3	34		WXRF	82MIL 01		<u>Ho (ng/g)</u>				
3	0.05		TCGS	80AND 01		<	2000	L	WXRF	82MIL 01
3.4	0.3		ITNA	84SUZ 02		340	110		ITNA	84SUZ 02
						380	50		ICPES	82CRO 01
<u>Ge (ug/g)</u>						<u>I (ug/g)</u>				
3.5	34		WXRF	82MIL 01		0.9		34	WXRF	82MIL 01
<u>H (%)</u>						1.63			ITNA	85SUN 01
3.68	0.07		TCGS	79AND 01		1.77			IENA	84GLA 02
3.7	0.1		TCGS	79FAI 01		1.8	0.2		ITNA	80GER 01
3.7	0.1	D	TCGS	80AND 01		2	0.3		ITNA	84SUZ 02
3.7	0.1	D	TCGS	80GER 01						
4.17	14		CB	85NAD 01		<u>In (ng/g)</u>				
4.17	0.01		CB	80SCH 02		36	3		ITNA	830BR 01
4.59	0.07	14	CB	85NAD 01		36	4		ITNA	80GER 01
						40	10		ITNA	79CAH 01
<u>H2O- (%)</u>										
1.6			GRAV	85LIN 02		40.5	5		ITNA	84CHA 02
1.62			FD	80KHA 02						
1.6	0.1		GRAV	85MAN 01						
1.6	0.1	2	MPOES	85MAN 01						
1.6	0.1	2	MPOES	85MAN 01						

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>K (ug/g)</u>					<u>Li (ug/g)</u>					
3400	100		ITNA	83JER 01		35			OES	83MIL 01
			XRF	79CAH 01		36.2	0.1		AA	79CAH 01
3800	50		ITNA	83OBR 01		37	1		ICPES	84NAD 01
3900	100		ICPES	84NAD 01		47			CPAA	83BIR 01
4000	200		ITNA	81JIN 01						
4000	900		ITNA	84CHA 02						
4100	80		AA	82KAM 01						
4100	100		TCGS	79AND 01		134	13		ITNA	80KOS 01
4100	200		ICPES	82NAD 02		150	10		ICPES	82CRO 01
4100	500		ITNA	86GLA 01		163	10		ITNA	84CHA 02
4120	50		ITNA	85SUN 01		170	20		ITNA	85SUN 01
4200	34	AA	83BET 01			170	30		ITNA	85AKA 01
4200	150		AA	82NAD 02		173	12		ITNA	86GLA 01
4200	200	D	TCGS	80GER 01		174	24		ITNA	84SUZ 02
4200	200		TCGS	79FAI 01		177	10		ITNA	85GAU 04
4200	200	D	TCGS	80AND 01		180			ITNA	85GRE 02
4200	200		ITNA	79CAH 01		180	30		ITNA	80GER 01
4200	200		ITNA	80GER 01		180	70		ITNA	80GAR 01
4200	400	34	AA	83BET 01		190	20		ITNA	81JIN 01
4300	645		ITNA	80GAR 01		220	40		ITNA	79CAH 01
4400	300		ITNA	85AKA 01						
4523.5	166		ICPES	85PEA 01						
4700	300		ICPES	85HAR 01						
14900			EXRF	82EBD 02		600	300		XRF	79CAH 01
						870	10		ICPES	84NAD 01
<u>K-40 (pCi/g)</u>						910			DCPES	85MCC 02
2.7	0.2		GAMMA	84ROS 03		980	40		ICPES	85HAR 01
						990	30		AA	82KAM 01
						990	40		AA	82NAD 02
<u>La (ug/g)</u>						1020	10		ICPES	82NAD 02
						1052			ICPES	85PEA 01
8.88	0.74		ITNA	84CHA 02		1100	100	34	AA	83BET 01
10.9	0.5		ITNA	80KOS 01		1300		34	AA	83BET 01
11.4	0.6		ITNA	84SUZ 02		1300	300		ITNA	80GER 01
12.8	0.5		ITNA	83OBR 01		1400	100		IENA	85GLA 02
13.03	0.3		ITNA	81JIN 01		1400	220		ITNA	80GAR 01
14.2	0.1		ITNA	86GLA 01		1600	700		ITNA	85AKA 01
14.5	0.2		ICPES	82CRO 01		1714			CPAA	83BIR 01
15			ITNA	85GRE 02		19900			EXRF	82EBD 02
15	2.6		ITNA	80GAR 01						
15.1	1.2		ITNA	79CAH 01						
15.2	0.8		ICPES	83MAH 05						
15.4	0.6		ITNA	85SUN 01		20	4.3		CPXRF	80KIR 01
15.6	0.4		ICPES	85HAR 01		23			ITNA	84CLE 01
15.9	0.6		ITNA	85GAU 04		26	2	34	FAA	83BET 01
17	1		ITNA	85AKA 01		26	6		AE+AF	82GOL 01
18	2		ITNA	80GER 01		27	2		ITNA	83JER 01
19	34		WXRF	82MIL 01		27.1	0.4		ICPES	83MAH 05
19	2		ITNA	83JER 01		27.3	1.4		ITNA	82JER 01
21	1		ITNA	82JER 01		27.4	2.5		ITNA	84CHA 02
						28			ESR	85SHI 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mn (ug/g) cont.</u>									
28		34	WXRF	82MIL 01	680	38		ITNA	79CAH 01
28	0.56		AA	82KAM 01	700	100		ITNA	85AKA 01
28	1		ICPES	85HAR 01	720	40		ITNA	83OBR 01
28.4	0.8		ITNA	85SUN 01	760	160		ITNA	84GLA 02
28.5	2.34	11	AA	84NAK 01	780	27		ITNA	84CHA 02
28.6	0.7	11	AA	84NAK 01	787	40		ITNA	83JER 01
29			DCPES	85MCC 02	799	15		ITNA	82JER 01
29	1		ITNA	84GLA 02	800	50		AA	82NAD 02
29	1		ICPES	84NAD 01	808.78			ICPES	85PEA 01
29	3		ITNA	85AKA 01	810	30		ICPES	82NAD 02
29	5	D	TCGS	80GER 01	811	5		ITNA	86GLA 01
29	5	D	TCGS	80AND 01	825		34	WXRF	82MIL 01
29	5		TCGS	79FAI 01	850		34	AA	83BET 01
29.1	0.6		ITNA	86GLA 01	850	40		ITNA	80GER 01
30.3	0.7	11	AA	82LIN 03	858	22		ITNA	85GAU 04
30.9	0.9	11	AA	82LIN 03	858	39		ITNA	85SUN 01
31		34	FAA	83BET 01	860			ITNA	81JIN 01
31	3		AA	83RAP 01	870	60	34	AA	83BET 01
31.5	1.1		ITNA	83OBR 01	884	32		ITNA	80GAR 01
32	3		ITNA	80GER 01	894	15		ICPES	84NAD 01
32	9		ITNA	79CAH 01	910	40		ICPES	85HAR 01
33.7	1.2		ITNA	80GAR 01	915			CPAA	83BIR 01
34			ICPES	82NAD 02	940	260		XRF	79CAH 01
720			EXRF	82EBD 02	1000			ITNA	84CLE 01
					1025	125		ITNA	82SCH 05
					4450			EXRF	82EBD 02
<u>Mo (ug/g)</u>									
<	4	L	ITNA	79CAH 01					
<	6		ITNA	86GLA 01					
2		34	WXRF	82MIL 01					
5.7	0.1		ICPES	83MAH 05	4		34	WXRF	82MIL 01
<u>Nb (ug/g)</u>									
<u>N (%)</u>									
1.19	0.08		CHEML	81NAD 01	10	2		ITNA	80GER 01
1.2	0.1		TCGS	79AND 01	11		34	WXRF	82MIL 01
1.26	0.03		CB	80SCH 02	11.7	2.1		ITNA	85SUN 01
1.27			TITR	85NAD 01	11.8	0.4	D	TCGS	80AND 01
1.27	0.08	D	TCGS	80AND 01	11.8	0.4		TCGS	79FAI 01
1.27	0.08	D	TCGS	80GER 01	12			ITNA	85GRE 02
1.27	0.08	D	TCGS	80GER 01	13	0.1		ICPES	82CRO 01
1.27	0.08		TCGS	79FAI 01	14.2	2		ITNA	84SUZ 02
1.285	0.014		POT	84RIC 01	15.6	3.7		ITNA	81JIN 01
1.3	0.03		CB	85NAD 01					
1.72	0.06		IC	83NAD 01					

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference											
<u>Ni (ug/g)</u>																					
15.7	0.6		AA	79CAH 01		12	0.5	11	AA	84NAK 01											
16			DCPES	85MCC 02		12.1	0.4		AA	83RAP 01											
16	2		ICPES	85HAR 01		12.1	0.6	11	AA	82LIN 03											
16.2	0.1	11	AA	82LIN 03		12.2		6	FAA	84FUD 01											
16.4	0.4		XRF	85HAR 01		12.4	0.4		HAA	82NAD 01											
16.6			ICPES	84NAD 01		12.4	2	34	FAA	83BET 01											
17.1			ICPES	81MER 03		12.9	1.7		POT	84PIN 01											
18	3.4		CPXRF	80KIR 01		13		34	WXRF	82MIL 01											
18.7	2.1		AA	83RAP 01		13	0.52		AA	82KAM 01											
18.9	1.2	11	AA	84NAK 01		13.1		34	FAA	83BET 01											
19	0.57		AA	82KAM 01		13.7			EXRF	84PIN 01											
19	3.5		AE+AF	82GOL 01		13.9	1.5	11	AA	84NAK 01											
19.2		34	FAA	83BET 01		15.3	2.5		AA	79CAH 01											
19.3	0.7	11	AA	82LIN 03		16.8	0.4		XRF	85HAR 01											
19.4	1.4		ITNA	81JIN 01		<u>Pb-210 (pCi/g)</u>															
19.5	3.2	11	AA	84NAK 01		0.449	0.024	D	NM	81CAS 01											
19.6	0.2		ICPES	83MAH 05		0.449	0.024		NM	80CAS 01											
19.6	2	34	FAA	83BET 01		0.5	0.2		NM	84ROS 03											
20.4	2		FAA	80LAN 01		0.8	0.2		GAMMA	84ROS 03											
22		34	WXRF	82MIL 01		<u>Po-210 (pCi/g)</u>															
23	4		ITNA	79CAH 01		0.5	0.2		RAS	84ROS 03											
26	4		PAA	80GER 01		<u>Pr (ug/g)</u>															
<u>O (%)</u>											3	34	WXRF	82MIL 01							
18.31	0.23	34	14NAA	80KHA 02		3.3	0.1		ICPES	82CRO 01											
18.4	0.7		14NAA	80NAD 01		<u>Ra-226 (pCi/g)</u>															
19.8	0.32	35	14NAA	80KHA 02		0.41	0.06		GAMMA	84ROS 03											
<u>P (ug/g)</u>											<u>Rb (ug/g)</u>										
85	17		ICPES	81NAD 01		26.9			ITNA	84GIB 01											
103	3		ICPES	85HAR 01		28.2	1.1		ITNA	81JIN 01											
192	2		ICPES	84NAD 01		28.8	1.2		ITNA	85SUN 01											
205		34	WXRF	82MIL 01		29		34	WXRF	82MIL 01											
280			AA	82NAD 02		29	1		ITNA	80GER 01											
280	50		ICPES	82NAD 02		29	1		PAA	80GER 01											
280	80		XRF	79CAH 01		<u>Ra-226 (pCi/g)</u>															
285	87		ICPES	85PEA 01		29	5	5	ITNA	80TOU 01											
1310			EXRF	82EBD 02		29	5		ITNA	81KUL 01											
<u>Pb (ug/g)</u>											29	5	ITNA	80KOS 01							
6.9	0.9		ICPES	81NAD 01		29	5		ITNA	85GAU 04											
8.3	1.9		CPXRF	80KIR 01		29	5		ITNA	79CAH 01											
10	2		ICPES	85HAR 01		29	5		ITNA	85AKA 01											
11.2	0.3		IDMS	83BRO 01		29.1	0.8		CPXRF	80KIR 01											
11.4	0.2	11	AA	82LIN 03		30	2		ITNA	84CHA 02											
11.5		6	FAA	84FUD 01		33	2														
11.8	0.2		ICPES	83MAH 05		34	4.6														
12			DCPES	85MCC 02		34.8	2.5														

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>S (%)</u>									
0.09			ICPES	85PEA 01	6.2		34	WXRF	82MIL 01
1.19	0.01		XRF	79CAH 01	6.2	0.2		ITNA	79CAH 01
1.37	0.01		IC	83NAD 01	6.2	0.3		ITNA	86GLA 01
1.48			XRF	83NAD 01	6.3	0.1		ITNA	80KOS 01
1.48	0.003		IC	85GEN 01	6.3	0.2	5	ITNA	80TOU 01
1.48	0.07		XRF	81NAD 01	6.4	0.2		ITNA	83JER 01
1.5	0.7		ITNA	82JER 01	6.42	0.25		ITNA	84CHA 02
1.5	0.7		NAA	81HO 02	6.56	0.23		ITNA	80GAR 01
1.57	0.01		CB	86GAU 01	6.7	0.05		ITNA	81JIN 01
1.58	0.02		CB	85GLA 03	6.8	0.6		ITNA	80GER 01
1.59	0.02	D	TCGS	80AND 01	6.9	0.9	5	ITNA	80TOU 01
1.59	0.02	D	TCGS	80GER 01					
1.59	0.02		TCGS	79FAI 01	<u>Se (ug/g)</u>				
1.59	0.03		CPAA	84LAN 02	1.9	0.5		ITNA	86GLA 01
1.59	0.09		TCGS	79AND 01	2.4		34	WXRF	82MIL 01
1.6	0.02		XRF	84WEB 01	2.4	0.2		AA	83RAP 01
1.6	0.07		CPXRF	80KIR 01	2.4	0.3		RTNA	80KNA 01
1.62			UU	82EBD 02	2.54	0.45		ITNA	84CHA 02
					2.55	0.29		FAAC	85WOO 01
					2.57	0.05		IENA	80KOS 01
<u>Sb (ng/g)</u>									
410	150		HAA	82NAD 01	2.58			FAA	82WIL 01
460			ITNA	84GIB 01	2.59			AF	82WIL 01
520	30		ITNA	82JER 01	2.6	0.3		ITNA	80GER 01
530	50		ITNA	81KUL 01	2.65	0.02	7	HAA	84IMA 01
530	50		ITNA	80KOS 01	2.65	0.1	D	HAA	84IMA 03
560	40		AA	83RAP 01	2.69	0.4		RTNA	84DEL 01
580	40		ITNA	86GLA 01	2.7	0.3		HAA	85LIN 01
600		11	HAA	82CRO 03	2.7	0.3		HAA	85LIN 02
600			ITNA	84CLE 01	2.7	0.4		ITNA	84SUZ 02
600		11	HAA	82CRO 03	2.9	0.2		ITNA	85AKA 01
600	90		ITNA	80GER 01	3	0.1		ITNA	79CAH 01
620	20		ITNA	83JER 01	3	0.4		ITNA	84TU 01
620	50		ITNA	84TU 01	3.1			ITNA	84CLE 01
620	80		ITNA	81JIN 01	3.12	0.17		HAA	82NAD 01
630	60		ITNA	84CHA 02	3.62	0.52		ITNA	85SUN 01
640	150		ITNA	85SUN 01					
650	90		ITNA	85GAU 04	<u>Si (%)</u>				
690	50	5	ITNA	80TOU 01	3.1	0.14		CPXRF	80KIR 01
800	50		ITNA	79CAH 01	5.5	0.4	34	AA	83BET 01
1000		34	WXRF	82MIL 01	5.68	0.01		ICPES	84NAD 01
					5.7		34	AA	83BET 01
					5.8	0.1	D	TCGS	80AND 01
5.3	1.2		CPXRF	80KIR 01	5.8	0.1		TCGS	79FAI 01
5.7	0.2		ICPES	85HAR 01	5.8	0.1	D	TCGS	80GER 01
5.9	0.2		ITNA	82JER 01	5.9122	0.0187		ICPES	85PEA 01
6	0.3		ITNA	81KUL 01	5.92	0.01		XRF	79CAH 01
6.06	0.11		ITNA	85SUN 01	6.05	0.2		TCGS	79AND 01
6.1	0.4		ITNA	85AKA 01	6.09	0.07		ICPES	82NAD 02
6.14	0.2		ITNA	85GAU 04	6.21	0.08		AA	82NAD 02
					27.79			EXRF	82EBD 02

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sm (ug/g)</u>										
1.1	0.1		ITNA	80KOS 01		290	30		ITNA	81JIN 01
1.9	0.1	5	ITNA	80TOU 01		290	60		ITNA	86GLA 01
2		34	WXRF	82MIL 01		300			ITNA	85GRE 02
2.1	0.05		TCGS	79AND 01		300	100		ICPES	82CRO 01
2.1	0.07		TCGS	79FAI 01		310	30		ITNA	84SUZ 02
2.1	0.07	D	TCGS	80AND 01		320	50		ITNA	80GER 01
2.1	0.07	D	TCGS	80GER 01		330	40		ITNA	79CAH 01
2.2	0.1		ITNA	85AKA 01		330	40		ITNA	85SUN 01
2.28	0.08		ITNA	85GAU 04		330	120		ITNA	84CHA 02
2.4			ITNA	85GRE 02						
2.4	0.05		ITNA	85SUN 01						
2.5	0.4		ITNA	80GAR 01						
2.57	0.09		ITNA	81JIN 01		<	600	L	WXRF	82MIL 01
2.6	0.1		ITNA	79CAH 01		<	830		ITNA	84SUZ 02
2.6	0.1		ICPES	82CRO 01		500	50		HAA	82NAD 01
2.62	0.13		ITNA	83OBR 01						
2.7	2		ITNA	83JER 01						
2.8	0.3		ITNA	80GER 01						
3.1	0.3		ITNA	84SUZ 02						
<u>Sn (ug/g)</u>										
1		34	WXRF	82MIL 01		4.3			ITNA	82JER 01
2.3			FAA	84LON 01		4.3	0.3		ITNA	80KOS 01
8.08	1.02		HAA	82NAD 01		4.3	0.9		ITNA	81KUL 01
84.2	2.6		ITNA	85SUN 01		4.4	0.1		ICPES	83MAH 05
						4.4	0.5		ITNA	84SUZ 02
<u>Sr (ug/g)</u>										
60	1		ICPES	84NAD 01		4.48	0.04		ITNA	81JIN 01
76.4	12.8		ITNA	85SUN 01		4.5	0.02		IENA	85BEL 01
79	9		ITNA	82JER 01		4.5			ITNA	85AKA 01
80	11		ITNA	84TU 01		4.6	0.2		ITNA	86GLA 01
83.6	7.8		ITNA	83OBR 01		4.63	0.07		ITNA	85SUN 01
84	2		ICPES	85HAR 01		4.8	0.2		ITNA	80GER 01
84	9		ITNA	80GER 01		4.8	0.6		ITNA	80GAR 01
90		34	WXRF	82MIL 01		4.81	0.17		ITNA	85GAU 04
91	18		ITNA	79CAH 01		5		34	WXRF	82MIL 01
95.5	11.8		ITNA	81JIN 01						
<u>Ta (ng/g)</u>										
290	50		ITNA	84CHA 02		0.499	0.011	D	NM	81CAS 01
360	10		ITNA	84SUZ 02		0.499	0.011		NM	80CAS 01
390	50		ITNA	85GAU 04						
390	50		ITNA	79CAH 01		0.452	0.017		NM	80CAS 01
400	30		ITNA	80GER 01		0.452	0.017	D	NM	81CAS 01
450	40		ITNA	85SUN 01						
450	50		ITNA	81JIN 01						
460	30		ITNA	84TU 01		0.40	0.07		GAMMA	84ROS 03
460	90		ITNA	85AKA 01		0.484	0.018		NM	80CAS 01
						0.484	0.018	D	NM	81CAS 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>Tl (ug/g)</u>					<u>U (ug/g) cont.</u>						
592	30		ICPES	84NAD 01		1.29	0.04		DNA	85GAU 04	
1310	20		ICPES	85HAR 01		1.29	0.07		DNA	86GLA 01	
1437.6	119.8		ICPES	85PEA 01		1.3	0.02		ICPES	83MAH 05	
1480	30		TCGS	79AND 01		1.3	0.1	35	DNA	81GLA 04	
1550	40	D	TCGS	80GER 01		1.3	0.11		ITNA	83OBR 01	
1550	40	D	TCGS	80AND 01		1.3	0.12		ITNA	85SUN 01	
1550	40		TCGS	79FAI 01		1.31	0.09		ITNA	82JER 01	
1560	70		ITNA	83JER 01		1.33	0.04		DNA	86GAU 01	
1570	100		ITNA	86GLA 01		1.4			DNA	84GLA 11	
1580	80		ITNA	82JER 01		1.45	0.05	35	DNA	81GLA 03	
1600		34	WXRF	82MIL 01		1.5	0.13		ITNA	84CHA 02	
1600	40		ICPES	82NAD 02							
1620	45		ITNA	83OBR 01		<u>U-234 (pCi/g)</u>					
1630			ICPES	81MER 03		0.448	0.012	D	NM	81CAS 01	
1630	70		ITNA	80GER 01		0.448	0.012		NM	80CAS 01	
1700	50		ICPES	83MAH 05							
1700	300		CPXRF	80KIR 01		<u>U-235 (fCi/g)</u>					
1720	170		ITNA	80GAR 01		22.8	1.9	D	NM	81CAS 01	
1756	128		ITNA	85SUN 01		22.8	1.9		NM	80CAS 01	
1760			AA	82NAD 02							
1800	100		XRF	79CAH 01		0.444	0.016		NM	80CAS 01	
1800	300	34	COLOR	83BET 01		0.444	0.016	D	NM	81CAS 01	
1900		34	COLOR	83BET 01							
2230			WXRF	83GAR 01		<u>U-238 (pCi/g)</u>					
5990			EXRF	82EBD 02		37.4	3.1	11	AA	82LIN 03	
						39	2		ITNA	83JER 01	
						40.5	0.9		ICPES	85HAR 01	
	<	1000	L	WXRF	82MIL 01						
						41	2.05		AA	82KAM 01	
380	40		ITNA	84SUZ 02		41.6	2.2		ITNA	85SUN 01	
400	100		ICPES	82CRO 01		42	2		ICPES	83MAH 05	
						42	2.4	11	AA	82LIN 03	
						42	4.2		FAA	80LAN 01	
						43		34	WXRF	82MIL 01	
1		34	WXRF	82MIL 01		43	1		ITNA	82JER 01	
1.1	0.2		ITNA	79CAH 01		43	4		AA	83RAP 01	
1.12	0.4		ITNA	81KUL 01		43.4	1.8		ITNA	83OBR 01	
1.14	0.07		ITNA	84SUZ 02		44			ITNA	84CLE 01	
1.16	0.11		ITNA	81JIN 01		44	3		ITNA	80GER 01	
1.2	0.1	5	ITNA	80TOU 01		44	7	11	AA	84NAK 01	
1.21	0.1		ITNA	80GER 01		44.3			ICPES	81MER 03	
1.22	0.1		ITNA	83JER 01		45	2		ITNA	84GLA 02	
1.24	0.04		IENA	80KOS 01		45.5	1.6	11	AA	84NAK 01	
1.24	0.1		IENA	81KUL 02		46		34	FAA	83BET 01	
1.26	0.08		DNA	84GLA 02		46		6	AE+AF	82GOL 01	
1.28	0.02		IENA	85BEL 01		46	2		ITNA	86GLA 01	
1.28	0.08		DNA	80GAR 01		46	8	34	FAA	83BET 01	

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>V (ug/g) cont.</u>										
46	8.2		CPXRF	80KIR 01		19	4		ITNA	86GLA 01
46.9	2.5		ITNA	80GAR 01		24.3	4		AA	79CAH 01
48	7	6	AE+AF	82GOL 01		25	2		ITNA	84CHA 02
49			ITNA	85GAU 04		25	3	34	FAA	83BET 01
49.6	1.7	11	AA	82LIN 03		26	0.78		AA	82KAM 01
67	3		ICPES	84NAD 01		26	1		XRF	85HAR 01
						26.6	0.1	11	AA	82LIN 03
<u>W (ng/g)</u>										
600	200		ITNA	80GER 01		27.5	3		AA	83RAP 01
780	230		ITNA	83OBR 01		27.6	1.8	11	AA	84NAK 01
790	20		ITNA	84SUZ 02		27.6	2.4	11	AA	84NAK 01
890	150		ITNA	81JIN 01		27.7	1.4	11	AA	82LIN 03
920	150		ITNA	85SUN 01		28		34	WXRF	82MIL 01
1000	300		ITNA	79CAH 01		28	0.4		ICPES	83MAH 05
						28	1		ICPES	85HAR 01
<u>Y (ug/g)</u>										
5.8	0.5		PAA	80GER 01		29			FAA	83BET 01
8.3	0.5		ICPES	82CRO 01		30	3		ITNA	80KOS 01
9.5		34	WXRF	82MIL 01		31	6		ITNA	80GER 01
9.7	0.4		ICPES	85HAR 01		39	8		ICPES	84NAD 01
						28	2		ITNA	83JER 01
						28	3.7		CPXRF	80KIR 01
<u>Yb (ug/g)</u>										
0.9	0.01		ICPES	82CRO 01		<	140		ITNA	86GLA 01
0.98	0.07		ITNA	81JIN 01		47	6		ITNA	80GER 01
0.98	0.08		ITNA	80GER 01		55			WXRF	82MIL 01
1.04	0.17		ITNA	85SUN 01		57	5		PAA	80GER 01
1.09	0.06		ITNA	85GAU 04						
1.1			ITNA	85GRE 02						
1.1	0.1	5	ITNA	80TOU 01						
1.13	0.07		ITNA	86GLA 01						
1.14	0.2		ITNA	84CHA 02						
1.19	0.06		ITNA	84SUZ 02						
1.2	0.1		ITNA	79CAH 01						
						Zr (ug/g)				

TABLE 1632B-1: COMPILED DATA FOR NBS SRM 1632B TRACE ELEMENTS IN COAL  
 (revised 3/1/86)

ELEMENT	UNITS	NBS
		Mean ± SD
ASH	%	6.79 ± 0.16
Al	ug/g	8550 ± 190
As	ug/g	3.72 ± 0.09
Ba	ug/g	67.5 ± 2.1
Br	ug/g	17
C-Total	%	78.11 ± 0.37
Ca	ug/g	2040 ± 60
Cd	ng/g	57.3 ± 2.7
Ce	ug/g	9
Cl	ug/g	1260
Co	ug/g	2.29 ± 0.17
Cr	ug/g	11
Cs	ng/g	440
Cu	ug/g	6.28 ± 0.30
Eu	ng/g	170
Fe	ug/g	7590 ± 450
H	%	5.07 ± 0.06
Heat	BTU/lb	14005 ± 35
Hf	ng/g	430
K	ug/g	748 ± 28
La	ug/g	5.1
Li	ug/g	10
Mg	ug/g	383 ± 8
Mn	ug/g	12.4 ± 1
Mo	ug/g	0.9
N	%	1.56 ± 0.07
Na	ug/g	515 ± 11
Ni	ug/g	6.10 ± 0.27
Pb	ug/g	3.67 ± 0.26
Rb	ug/g	5.05 ± 0.11
S	%	1.89 ± 0.06
Sb	ng/g	240
Sc	ug/g	1.9
Se	ug/g	1.29 ± 0.11
Si	%	1.4
Sm	ug/g	0.87
Sr	ug/g	102
Th	ug/g	1.342 ± 0.036
Ti	ug/g	454 ± 17
U	ng/g	436 ± 12
V	ug/g	14
Volatile	%	35.4 ± 1.1
W	ug/g	480
Zn	ug/g	11.89 ± 0.78

TABLE 1633-1: COMPILED DATA FOR NBS SRM 1633 TRACE ELEMENTS IN COAL FLY ASH (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN		RANGE		AA		NAA		ICPES		XRF		PAA		OES		OTHER METHODS			
			Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Mean $\pm$ SD	(n)	Method	Mean $\pm$ SD	(n)	Method		
Ag	ng/g	---	300 $\pm$ 50	(3)	300	258 - 350	350	(1)	258	(1)	12.4 $\pm$ 0.6	(4)	12.3 $\pm$ 0.7	(8)	11.7	(1)	---	---	300	(1)	SSMS	---	---	
Al	%	---	12.6 $\pm$ 0.6	(37)	12.6	11.6 - 14.1	13.0 $\pm$ 0.7	(7)	60 $\pm$ 4	(7)	60 $\pm$ 8	(5)	64 $\pm$ 2	(3)	62.5 $\pm$ 1.7	(8)	---	---	12.6 $\pm$ 0.4	(3)	TGCS	12.9	(2) 14/NAA	
As	ug/g	61 $\pm$ 6	60.4	54 - 69.5	61 $\pm$ 4	---	60 $\pm$ 4	(8)	---	---	---	---	---	---	55.8	(2)	14/NAA	60	(1)	GCMES	61 $\pm$ 11	(3) SSMS		
As	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	59.5	(2)	AE-AF	---	---	---	---	---	---	---	---
As	ug/g	---	5.2 $\pm$ 2.6	(3)	4.84	2.75 - 8.0	---	---	5.2 $\pm$ 2.6	(3)	4.28	(2)	---	---	420	(2)	320	(1)	COLOR	600	(1) SSMS			
Au	ng/g	---	464 $\pm$ 35	(8)	450	320 - 600	---	---	2570 $\pm$ 300	(3)	2670 $\pm$ 130	(29)	2580 $\pm$ 300	(6)	2610 $\pm$ 410	(4)	2605	(2)	471 $\pm$ 30	(5)	TGCS	3000	(1) SSMS	
B	ug/g	---	---	---	---	2300 - 3000	2300 - 3000	---	12.2 $\pm$ 0.8	(12)	12.3 $\pm$ 1.7	(5)	---	---	3000	(1)	2325	(2)	14/NAA	3000	(1) SSMS			
Be	ug/g	12	12.1 $\pm$ 1.0	(18)	12	10.1 - 14	10.1 - 14	---	---	---	1.08	(1)	1.08	(1)	1.08	(1)	1.08	(1)	4.5	(1)	SSMS	---	---	
Bi	ug/g	---	2 $\pm$ 2	(3)	1.08	0.7 - 4.5	0.7 - 4.5	---	8.6 $\pm$ 2.3	(19)	7.75	(2)	---	---	---	---	---	---	---	---	---	---	---	---
Br	ug/g	---	8.4 $\pm$ 2.2	(22)	7.52	5.8 - 12.1	5.8 - 12.1	---	4.48 $\pm$ 0.25	(15)	4.63 $\pm$ 0.13	(7)	4.7 $\pm$ 0.6	(6)	4.8 $\pm$ 0.6	(5)	4.75	(2)	4.5 $\pm$ 0.6	(3)	TGCS	6.74	(2) 14/NAA	
C	%	---	3.3 $\pm$ 0.2	(3)	3.3	3.05 - 3.45	3.05 - 3.45	---	4.5 $\pm$ 0.3	(3)	4.52 $\pm$ 0.3	(15)	1.8 $\pm$ 0.4	(3)	1.32 $\pm$ 0.17	(5)	1.53	(2)	14/NAA	1.63	(1) SSMS			
Ca	ug/g	4.65 $\pm$ 0.34	(44)	4.62	3.92 - 5.3	4.65 $\pm$ 0.14	4.65 $\pm$ 0.14	1.47 $\pm$ 0.15	1.47 $\pm$ 0.15	(36)	1.36 $\pm$ 0.20	(5)	1.36 $\pm$ 0.20	(5)	1.36 $\pm$ 0.10	(3)	1.50 $\pm$ 0.10	(3)	TGCS	1.5	(1) POI			
Cd	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.93	(1)	PoI	1.6	(1) FAE		
Cd	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.52	(1)	AF	1.850	(1) IDMS			
Ce	ug/g	---	14.9 $\pm$ 10	(33)	150.6	125 - 176	---	150 $\pm$ 7	(20)	148	(2)	156 $\pm$ 6	(3)	152.7 $\pm$ 0.6	(3)	200	(1)	210	(2)	SSMS	136	(2) 14/NAA		
Cf	ug/g	---	38 $\pm$ 13	(14)	40.6	19.6 - 58	40 $\pm$ 5	40 $\pm$ 5	40 $\pm$ 5															
Co	ug/g	38	4.0 $\pm$ 3	(44)	4.0	3.2 - 4.8	4.0 $\pm$ 5	4.0 $\pm$ 5	126 $\pm$ 10	(10)	128 $\pm$ 7	(27)	115 $\pm$ 11	(8)	131 $\pm$ 17	(5)	136 $\pm$ 6	(4)	135	(2)	SSMS	140 $\pm$ 30	(3) 14/NAA	
Cr	ug/g	131 $\pm$ 2	127 $\pm$ 10	(58)	129.2	103 - 159	7.3 - 10	8.4	7.3 - 10	8.4	8.5 $\pm$ 0.5	(22)	128 $\pm$ 12	(6)	130 $\pm$ 7	(8)	8	(1)	10	(1)	14/NAA	8.6	(1) SSMS	
Cs	ug/g	---	8.6 $\pm$ 0.6	(26)	8.6	7.3 - 10	115 $\pm$ 142	126 $\pm$ 4	111	126 $\pm$ 4	128 $\pm$ 12	130 $\pm$ 7	130 $\pm$ 6	138 $\pm$ 3	130 $\pm$ 6	130 $\pm$ 3	135	(9)	SSMS	131	(1) AE-AF			
Cu	ug/g	128 $\pm$ 5	129 $\pm$ 7	(39)	129	10.2 $\pm$ 1.1	10.2	9 - 12.1	11	2.1 - 89	89	11	11	11	11	11	11	12	(1)	SSMS	6.55	(2) SSMS		
Dy	ug/g	---	34 $\pm$ 48	(3)	2.64 $\pm$ 0.19	2.6	2.3 - 3.1	2.3 - 3.1	2.0 - 20	10 - 20	2.60 $\pm$ 0.15	(22)	2.5	(2)	2.5	(2)	2.8	(1)	2.8	(1)	---	---	---	
Eu	ug/g	---	17 $\pm$ 6	(3)	6.16 $\pm$ 0.27	6.2	5.53 - 6.8	6.3 $\pm$ 0.4	6.3 $\pm$ 0.4	6.3 $\pm$ 0.4	6.13 $\pm$ 0.26	(24)	6.12 $\pm$ 0.29	(9)	6.11 $\pm$ 0.12	(8)	6.09	(2)	5.87 $\pm$ 0.30	(3)	TGCS	6.34 $\pm$ 0.32	(3) 14/NAA	
Fe	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	20	(1)	ISE	6.2	(1) FAF		
Fe	%	---	42 $\pm$ 4	(16)	41	34.3 - 50	58	(1)	41 $\pm$ 3	(11)	41 $\pm$ 3	(11)	41 $\pm$ 3	(11)	42.5 $\pm$ 5	(3)	43.5 $\pm$ 5	(3)	48	(1)	COLOR	11.6	(2) TGCS	
Ge	ug/g	---	11.6 $\pm$ 0.4	(6)	11.6	11 - 12.1	---	---	11.5 $\pm$ 0.4	(3)	12.1	(1)	12.1	(1)	12.1	(1)	12.5	(1)	25.9	(1)	COLOR	1200	(1) TGCS	
Ge	ug/g	---	24 $\pm$ 3	(7)	25	19 - 26.8	---	---	---	---	26.8	(1)	22.5	(2)	22.5	(2)	22.5	(2)	10	(1)	14/NAA	2.21	(2) SSMS	
H	ug/g	---	1100	(2)	1000 - 1200	---	---	---	---	---	---	---	---	---	---	---	---	---	1200	(1)	TGCS	3.4	(1) SSMS	
H2O-T	%	---	0.03	(1)	0.17	(1)	0.17	(1)	0.17	(1)	0.17	(1)	0.17	(1)	0.17	(1)	0.17	(1)	0.17	(1)	FD	---	---	
H2O-T	ug/g	---	< 1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Hf	ug/g	---	7.6 $\pm$ 0.5	(21)	7.62	6.5 - 8.2	7.6 $\pm$ 0.5	(21)	1.71	(2)	14/NAA	1.71	(2) TGCS											
Hg	ug/g	14.0 $\pm$ 10	13.6 $\pm$ 17	(15)	13.7	100 - 170	128 $\pm$ 9	(5)	144 $\pm$ 10	(6)	146 $\pm$ 10	(6)	146 $\pm$ 10	(6)	167 $\pm$ 36	(5)	167 $\pm$ 36	(5)	1.85	(2)	14/NAA	1.85	(2) SSMS	
Ho	ug/g	---	2.0 $\pm$ 0.9	(6)	1.94	0.82 - 3.6	---	---	1.96 $\pm$ 0.03	(4)	2.21	(2)	SSMS	2.21	(2) 14/NAA									
I	ug/g	---	2.8 $\pm$ 0.4	(6)	2.9	2 - 3.4	---	---	2.6 $\pm$ 0.6	(3)	3.4	(1)	SSMS	3.4	(1) 14/NAA									
In	ug/g	---	220 $\pm$ 80	(10)	16	118 - 320	---	---	200 $\pm$ 80	(8)	285	(2)	SSMS	285	(2) 14/NAA									
Ir	ug/g	---	17.6 $\pm$ 1.7	(3)	18.6	15.6 - 18.6	---	---	17.6 $\pm$ 1.7	(3)	1.24	(2)	SSMS	1.24	(2) 14/NAA									
K	ug/g	1.72	1.69 $\pm$ 0.09	(47)	1.71	1.51 - 1.9	1.66 $\pm$ 0.05	(4)	1.72 $\pm$ 0.11	(21)	1.65 $\pm$ 0.10	(7)	1.68 $\pm$ 0.05	(4)	1.59 $\pm$ 0.01	(3)	1.6	(1)	1.73 $\pm$ 0.04	(3)	TGCS	1.71	(2) 14/NAA	
K	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
L	ug/g	---	79 $\pm$ 5	(33)	80	68 - 91	80	(1)	80	(1)	80	(1)	80	(1)	77 $\pm$ 5	(3)	77 $\pm$ 5	(3)	77 $\pm$ 5	(3)	77 $\pm$ 5	(3)	77 $\pm$ 5	(3)
Li	ug/g	---	170 $\pm$ 80	(5)	161	80 - 300	80	(1)	80	(1)	80	(1)	80	(1)	77 $\pm$ 5	(3)	77 $\pm$ 5	(3)	77 $\pm$ 5	(3)	77 $\pm$ 5	(3)	77 $\pm$ 5	(3)
Lu	ug/g	---	1.1 $\pm$ 0.3	(15)	1.01	0.78 - 1.7	1.01	1.11 $\pm$ 0.24	(13)	1.11 $\pm$ 0.24	(13)	1.11 $\pm$ 0.24	(13)											
Mg	ug/g	492 $\pm$ 7	496 $\pm$ 20	(59)	493	440 - 540	492 $\pm$ 24	(11)	491 $\pm$ 18	(22)	488 $\pm$ 19	(7)	508 $\pm$ 17	(7)	493 $\pm$ 2	(4)	485 $\pm$ 22	(3)	480	(1)	TGCS	480	(1) 14/NAA	
Mn	ug/g	---	28 $\pm$ 5	(15)	28	20 - 37	36	(1)	27 $\pm$ 6	(5)	29	(2)	26.5	(2)	37	(1)	37	(1)	37	(1)	37	(1)	37	(1)
N	ug/g	---	< 1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
NH4	ug/g	---	< 100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
NO2	ug/g	---	< 100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
NO3	ug/g	---	< 100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

TABLE 1633-1: COMPILED DATA FOR NBS SRM 1633 TRACE ELEMENTS IN COAL FLY ASH (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS Mean ± SD (n)	MEDIAN Range	AA Mean ± SD (n)	MA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	PAA Mean ± SD (n)	OES Mean ± SD (n)	OTHER METHODS Mean ± SD (n) Method
Na	ug/g	---	3130 ± 200 (61)	3200	2658 - 3600	3170 ± 120 (4)	3080 ± 240 (21)	3100 ± 140 (7)	---	3600 ± 300 (4)	2950 (2)
Na	ug/g	---	---	---	---	---	---	---	---	---	3240 (2) TGS
Nb	ug/g	29 ± 20 (4)	26	7 - 56	---	---	63 ± 4 (10)	94 (1)	27 (2)	---	3200 (1) SSMS
Nd	ug/g	64 ± 6 (14)	62	57.8 - 81	---	---	97 ± 14 (11)	101 ± 14 (6)	98 ± 6 (6)	96 ± 3 (7)	5.6 (1) SSMS
Ni	ug/g	98 ± 3 (5)	98.5	84 - 110	96 ± 9 (8)	97 ± 14 (11)	101 ± 14 (6)	98 ± 6 (6)	120 (2)	106 (2) TGS	
O	%	47.02 (1)	4.00	---	---	---	4000	940 ± 130 (5)	67 ± 3 (6)	70 ± 3 (6)	62.0 (2) TGS
Os	ug/g	1010 ± 180 (8)	1040	750 - 1300	880 (1)	940 ± 130 (5)	67 ± 3 (6)	70 ± 3 (6)	74.5 (2)	96.47 ± 0.12 (3) IDHS	
P	ug/g	70 ± 4	72 ± 6 (39)	71	62 - 82	74 ± 7 (13)	71 (1)	69 ± 13 (6)	67 ± 3 (6)	70 ± 3 (6)	98 (1) AF
Pb	ug/g	---	---	---	---	---	---	---	---	---	102 (2) SSMS
Pb	ug/g	---	---	---	---	---	---	---	---	47.02 (1) TGS	
Pb-210	pCi/g	3.37 (1)	4.00	---	---	---	---	---	---	4.00	---
Pd	ug/g	< 2	---	---	---	---	4000	---	---	---	1900 (1) COLOR
Pr	ug/g	31 ± 8 (3)	28	24 - 40	---	24 (1)	---	---	---	---	74.5 (2) POL
Pr	ug/g	0.74 ± 0.55 (3)	0.451	0.4 - 1.36	---	0.92 (2)	---	---	---	7.7 (1) POL	
Rb	ug/g	115 ± 8 (30)	115	96 - 130	---	116 ± 8 (19)	---	115 ± 7 (5)	109 ± 16 (4)	110 (1) SSMS	
Re	ug/g	< 200	---	---	---	---	---	---	---	---	68.8 (1) AF-AF
Rh	ug/g	< 0.5	---	---	---	---	---	---	---	3.37 (1) POT	
Ru	ug/g	1.6 (2)	---	0.26 - 3	---	0.26 (1)	---	---	---	---	---
S	ug/g	4500 ± 500 (5)	4400	3900 - 5000	---	---	---	---	---	---	3.4 (2) SSMS
Si	%	0.98 (1)	---	---	---	---	6.8 ± 0.6 (25)	6.7 (2)	7.07 ± 0.06 (5)	---	---
Sb	ug/g	6.8 ± 0.7 (37)	6.9	5 - 8.4	6.63 (2)	6.8 ± 0.6 (25)	6.7 (2)	7.07 ± 0.06 (5)	23.8 (1) SSMS		
Sc	ug/g	26 ± 3 (31)	26.9	20 - 32	---	27.0 ± 1.5 (22)	22 (2)	23.8 (2) SSMS			
Se	ug/g	9.4 ± 0.5 (44)	9.5	8.7 - 11	9.48 (2)	9.7 ± 0.7 (25)	9.1 (2)	9.6 ± 1.2 (3)	9.76 ± 0.26 (5)	9.35 (2) GORES	
Se	ug/g	---	---	---	---	---	---	---	---	9.35 (1) DEPE	
Si	ug/g	22.0 ± 1.0 (17)	22	20 - 23.5	22.3 (2)	23.5 (1)	21.8 ± 1.2 (3)	22.1 ± 0.8 (3)	20.5 (2) TGS		
Sm	ug/g	12.9 ± 1.5 (27)	12.9	10.05 - 17	---	12.7 ± 1.1 (22)	15.8 (1)	12.7 ± 0.6 (5)	23 (1) SSMS		
Sn	ug/g	8.1 ± 3.8 (10)	6.7	2.8 - 12.7	12.7 (1)	10.2 (1)	5.85 (2)	12.2 (2)	10 (1) SSMS		
Sr	ug/g	1380 ± 100 (42)	1380	1200 - 1620	1340 (1)	1420 ± 120 (23)	1390 ± 140 (5)	1360 ± 70 (4)	1310 ± 70 (4)	1340 ± 60 (3) TGS	
Ta	ug/g	1.90 ± 0.14 (21)	1.9	1.6 - 2.2	---	1.90 ± 0.15 (20)	---	---	---	22.7 ± 0.3 (3) 14MAA	
Tb	ug/g	2.0 ± 0.5 (20)	1.99	1.2 - 3.12	---	1.9 ± 0.3 (17)	---	---	---	12.6 (2) SSMS	
Te	ug/g	1.8 ± 0.8 (3)	2.3	0.92 - 9.9	0.92 (1)	9.9 (1)	2.31 (2)	2.31 (2)	2.6 (2) SSMS		
Th	ug/g	24.5 ± 1.8 (25)	24.4	20 - 28	---	24.6 ± 1.2 (20)	21 (1)	21 (1)	26.2 (2) GAMMA		
Th-228	pCi/g	2.25 (1)	---	---	---	---	---	---	---	2.23 (1) NH	
Th-230	pCi/g	3.74 (1)	---	---	---	---	---	---	---	3.74 (1) NH	
Th-232	pCi/g	2.45 (1)	---	---	---	---	---	---	---	2.45 (1) NH	
Ti	ug/g	7100 ± 500 (45)	7230	6000 - 8200	7600 ± 1000 (3)	7000 ± 600 (18)	7100 ± 600 (8)	7700 ± 500 (5)	7420 ± 220 (5)	6650 (2) 14MAA	
Tl	ug/g	4 (1)	4.0 ± 0.7 (8)	3.7	3.5 - 5.3	5 (1)	1.36 ± 0.06 (3)	---	3.63 ± 0.13 (5)	5.3 (1) POT	
Tm	ug/g	1.35 ± 0.06 (4)	1.3	1.3 - 1.43	---	11.8 ± 0.9 (18)	9 (1)	11.8 ± 0.5 (5)	1.3 (1) SSMS		
U	ug/g	11.6 ± 0.2 (29)	11.8	9 - 13.8	---	11.8 ± 0.9 (18)	---	---	---	13 (1) SSMS	
U-234	pCi/g	4.07 (1)	---	---	---	4.8 ± 0.7 (14)	---	---	---	11.75 (2) IDHS	
U-235	pCi/g	0.18 (1)	---	---	---	---	---	---	---	4.07 (1) NH	
U-238	pCi/g	4.01 (1)	---	---	---	---	---	---	0.1790 (1) NH		
V	ug/g	214 ± 8	226 ± 24 (44)	223	174 - 295	260 ± 100 (4)	228 ± 15 (20)	225 ± 8 (7)	210 ± 50 (5)	220 (2) SSMS	
W	ug/g	4.8 ± 0.6 (16)	4.6	3.8 - 6	---	4.8 ± 0.7 (14)	---	---	---	4.6 (1) FLUOR	
Y	ug/g	66 ± 4 (11)	62	56 - 68	---	63.5 (2)	65 ± 4 (3)	64 ± 3 (4)	62 (2) SSMS		
Yb	ug/g	6.5 ± 1.1 (24)	6.2	4.7 - 8.9	---	6.3 ± 1.0 (19)	6.55 (2)	8.5 (1) NH	8.5 (2) SSMS		
Zn	ug/g	210 ± 20 (53)	212	180.7 - 250	213 ± 9 (13)	209 ± 10 (19)	212 ± 11 (10)	207 ± 7 (7)	210 ± 6 (6)	201 (1) AE-AF	
Zn	ug/g	---	---	---	---	---	---	---	---	250 ± 40 (3) SSMS	
Zr	ug/g	300 ± 60 (23)	301	160 - 410	---	350 ± 90 (9)	256 (2)	302 ± 11 (3)	160 (1) SSMS	305 (2) 14MAA	

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>						<u>Al (%) cont.</u>				
<	100	L	ITNA	77CHA 01		12.99	0.47		ICPES	81CHU 01
<	100	D	ITNA	78RYA 01		13	0.2		TCGS	79AND 01
<	300	L	ICPES	81CHU 01		13	2.6		OES	76WEW 01
<	400	D	PAA	77CHA 01		13.6	0.5		14NAA	81WIL 01
<	400	L	PAA	76CHA 01		14			OES	78SUG 01
<	500	L	UU	80HEN 01		14	1		AA	80STO 02
<	600	L	IENA	80GLA 03		14.1	2.8		ITNA	81WAN 01
<	1000	L	OES	76WEW 01		14.3	1.1		ITNA	78NAD 02
258	20		RTNA	77NAD 02		14.3	1.1		ITNA	75NAD 02
300			SSMS	83WEI 02						
350			AA	76WEW 01						
1320	130		PAA	74CHA 01						
<u>Al (%)</u>						46			ITNA	78KEL 02
						49	5		ITNA	76KUC 01
						50		6	SSMS	78GUI 01
10.4	0.6		ITNA	78MAC 01		54			ITNA	75KLE 01
10.96	0.402		ITNA	73SHE 01		54	1		IENA	78WAN 01
11.1	0.6		ICPES	85HAR 01		54	3		ITNA	78MAC 01
11.6			ICPES	80NAD 01		55			FAA	78GUI 01
11.7	2		XRF	79SMI 01		55	10		ICPES	81CHU 01
11.8	0.8		ITNA	76BLO 01		55.8	1.4	H	AE+AF	77FEL 01
11.9			ICPES	84CLE 01		56			ICPES	80FLO 01
12	1		ITNA	76OND 01		56	1	H	FAE	79FEL 01
12.1	0.5		ITNA	76RAG 01		56.6	3.6		ITNA	81WAN 01
12.2	0.3		ITNA	77MAE 01		57			ICPES	82NYG 01
12.2	0.5		14NAA	81WIL 02		57	3	35	NAA	81GLA 03
12.3	35		TCGS	78GLA 04		57	4		ITNA	75OND 01
12.3	0.5		ITNA	76WEW 01		58		13	ICPES	84BOT 01
12.3	0.6	D	ITNA	78RYA 01		58	1		ITNA	76BLO 01
12.3	0.6		ITNA	77CHA 01		58	1	35	RTNA	78GLA 02
12.35	0.25		ITNA	76STE 05		58	2		IENA	76STE 05
12.35	0.25		ITNA	77ROW 03		58	4	D	NAA	74OND 01
12.4	0.3	D	NAA	79STE 01		58	4		FAA	78HAY 01
12.4	0.7	35	ITNA	81GLA 03		58.1	1.6		RTNA	81GAL 01
12.5			ITNA	75KLE 01		58.1	1.6	D	RTNA	81GAL 02
12.5	0.3		ICPES	80NAD 01		59			ITNA	78WEA 01
12.6	0.1	35	ITNA	81GLA 02		59	2	35	VV	81GLA 04
12.6	0.2		ICPES	84BOT 01		59	3.5		HAA	77SMI 01
12.6	0.2		TCGS	79FAI 01		59	4		ITNA	77CHA 01
12.6	0.2	D	TCGS	80AND 01		59	4	D	ITNA	78RYA 01
12.6	0.4		ITNA	73ABE 01		59.1	4.8		IENA	77ROW 04
12.6	0.7		AA	76OND 01		59.8	2		IENA	77ROW 03
12.7			UU	80HEN 01		60			UU	80HEN 01
12.7			OES	80WAL 01		60	2.6	D	PAA	77CHA 01
12.7			ITNA	78WEA 01		60	2.6		PAA	76CHA 01
12.7			AA	79SIL 01		60	2.6		NAA	77JER 01
12.7	0.05		FAA	77PIL 01		60	3		GCMES	75TAL 01
12.7	0.5		ITNA	75OND 01		60.4	0.8	35	IENA	80GLA 03
12.7	0.5		ICPES	84NAD 01		60.7	2.6		PAA	74CHA 01
12.8			ICPES	80FLO 01		61			SSMS	83WEI 02
12.8	0.3		ITNA	78LAU 02		61	3		RTNA	74ORV 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>As (ug/g) cont.</u>						<u>B (ug/g)</u>				
61	4		ITNA	76OND 01		100			UU	80HEN 01
61	5		ITNA	73ABE 01		329			COLOR	79DAL 01
61	6		ITNA	84SIL 01		340			OES	79DAL 01
61.2			FAA	75POL 01		407			ICPES	80NAD 01
61.5	2.4	D	NAA	79STE 01		433	4	D	TCGS	80AND 01
61.5	2.4		ITNA	77ROW 04		433	4		TCGS	79FAI 01
61.5	3		PAA	75OND 01		443	5		TCGS	79AND 01
62			XRF	78CAM 02		450	20		ICPES	82OWE 01
63	4	6	PAA	82SEG 01		490	14	6	TCGS	76GLA 01
63	4		PAA	80SEG 01		492	13	6	TCGS	76GLA 01
63	4		FAE	80DSI 01		497	14	6	TCGS	76GLA 01
63	4		ITNA	85FIL 01		500	29		OES	76WEW 01
63	4	6	PAA	82SEG 01		600			SSMS	83WEI 02
63	7		EXRF	77GIA 01						
63.7	3.6		HAA	82NAD 01		<u>Ba (ug/g)</u>				
64			FAA	84SIL 01		1800			XRF	76WEW 01
64	1		PAA	76KAT 03		2100	100		14NAA	81WIL 01
64	2		ITNA	78LAU 02		2100	200		ICPES	84NAD 01
64	4		ITNA	76RAG 01		2300	100		AA	76OND 01
65	1		PAA	76KAT 02		2370			ICPES	80NAD 01
66	1		XRF	79SMI 01		2490			ITNA	75MIL 01
66.3	10.1		FAA	82BEN 01		2500			UU	80HEN 01
67.6	0.6		ITNA	75NAD 02		2500	250		ITNA	81WAN 01
68	6		ITNA	78NAD 02		2500	300		ITNA	76WEW 01
68	12		14NAA	81WIL 02		2510	50		IENA	77ROW 04
68	12		14NAA	81WIL 01		2510	160		ITNA	76RAG 01
68	15		ITNA	76WEW 01		2510	200		ITNA	76OND 01
69.5	7.6		ITNA	73SHE 01		2520			AA	79SIL 01
72		6	SSMS	78GUI 01		2540			ICPES	84CLE 01
74		13	ICPES	84BOT 01		2540			XRF	78CAM 02
<u>Au (ng/g)</u>						2540	50		IENA	77ROW 03
<	300	L	ICPES	81CHU 01		2540	50	D	NAA	79STE 01
<	500	L	UU	80HEN 01		2550	30		IENA	76STE 05
2.75	0.2		RTNA	77NAD 02		2550	30	D	NAA	ITNA 77ROW 04
4.84	0.13		RTNA	77NAD 01		2550	110		14NAA	81WIL 02
8	2	D	ITNA	78RYA 01		2580	170		ITNA	76STE 05
8	2		ITNA	77CHA 01		2600	160	D	PAA	77CHA 01
1700			ITNA	78WEA 01		2600	160		PAA	76CHA 01
						2600	170	5	IENA	80GLA 03
						2600	300		ITNA	78LAU 02
						2610	210		PAA	74CHA 01
						2630	20		XRF	79SMI 01
						2660	150		ITNA	84GLA 02
						2670	85		EXRF	77GIA 01
						2700			ITNA	78WEA 01
						2700	200		ITNA	78NAD 02
						2700	200		ITNA	75OND 01
						2700	200		ITNA	75NAD 02
						2710	190	D	ITNA	78RYA 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ba (ug/g) cont.</u>										
2710	190		ITNA	77CHA 01		<	1	L	PAA	76CHA 01
2720	80	5	IENA	80GLA 03		<	1	D	PAA	77CHA 01
2734	167		ITNA	73SHE 01		<	10	L	OES	76WEW 01
2750	140	5	IENA	80GLA 03		0.7			UU	80HEN 01
2780			ITNA	75KLE 01		1.08			PAA	74CHA 01
2800			ICPES	80FLO 01		4.5			SSMS	83WEI 02
2800	60		ITNA	85FIL 01						
2800	100	35	ITNA	81GLA 03						
2800	100	9	ITNA	78LAU 02						
2800	200		ICPES	85HAR 01		5.8	0.8	35	IENA	79GLA 02
2800	200	35	ITNA	81GLA 02		6			ITNA	75KLE 01
2840	180	35	NAA	81GLA 04		6	1		ITNA	78MAC 01
2860	70		ICPES	84BOT 01		6	2		EXRF	77GIA 01
2880	100		ITNA	77MAE 01		6.4	0.2	35	ITNA	81GLA 03
2900	120		FAA	760WE 01		6.5	0.2	5	IENA	80GLA 03
2900	200	5	IENA	80GLA 03		6.7	0.6		ITNA	76RAG 01
3000			SSMS	83WEI 02		6.9	0.3	35	NAA	81GLA 04
3000	600		OES	76WEW 01		7	1		ITNA	78LAU 02
3200	400		ITNA	78MAC 01		7.5	0.5		ITNA	78NAD 02
3400	400		ITNA	73ABE 01		7.52	0.46		ITNA	75NAD 02
						7.7	1.5		IENA	76STE 05
<u>Be (ug/g)</u>										
5			UU	80HEN 01		8.4	1.5		IENA	77ROW 03
9.56			FAA	75POL 01		9.2	0.6		ITNA	77ROW 04
10.1	6		FAA	79GEL 01		9.2	0.8		IENA	79STE 01
10.9			ICPES	80NAD 01		9.5			XRF	78CAM 02
11			ICPES	80FLO 01		10			UU	80HEN 01
11			OES	78SUG 01		11.2	3.5	D	ITNA	78RYA 01
11.9	0.3		ICPES	84BOT 01		11.2	3.5		ITNA	77CHA 01
12			AA	79SIL 01		12			ITNA	78WEA 01
12			AA	76WEW 01		12	4		ITNA	75OND 01
12	0.8		FAA	750WE 01		12	4		ITNA	73ABE 01
12	1	35	FAA	76GLA 02		12.1	1.5		ITNA	73SHE 01
12.1	6		FAA	79GEL 01						
12.3	0.3		FAA	760WE 01						
12.4	0.31		AA	74RAI 01		3.05	0.05		CB	79SIL 01
12.6	6		FAA	79GEL 01		3.3			UU	80HEN 01
12.6	0.25		ICPES	81CHU 01		3.45	0.02		GRAV	79SIL 01
12.6	0.5		AA	76OND 01						
13.2	6		FAA	79GEL 01						
13.5	6		FAA	79GEL 01						
14	0.95		OES	76WEW 01		1.15	0.02		AA	82HAR 01
15			ICPES	84CLE 01		3.5			XRF	76WEW 01
18.7	0.5		ICPES	84NAD 01		3.8		35	TCGS	78GLA 04
						3.92	0.28		PAA	74CHA 01
						4.1	0.36		ITNA	73SHE 01
						4.2			UU	80HEN 01
						4.2	0.2		ITNA	76RAG 01
						4.21	0.09		ITNA	75NAD 02
						4.21	0.09		ITNA	78NAD 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ca (%) cont.</u>						<u>Cd (ug/g)</u>				
4.3			AA	79SIL 01		0.93			POT	82CHR 01
4.3	0.2		AA	76OND 01		1			ITNA	76WEW 01
4.3	0.3	35	ITNA	81GLA 02		1.2	0.04	7	AA	73TAL 01
4.34			ITNA	75KLE 01		1.2	0.04		FAA	74TAL 01
4.4	0.18		14NAA	81WIL 02		1.2	0.1	6	PAA	82SEG 01
4.4	0.4	D	PAA	77CHA 01		1.2	0.2	6	PAA	82SEG 01
4.4	0.4		ITNA	75OND 01		1.2	0.2		PAA	80SEG 01
4.4	0.4		PAA	76CHA 01		1.3	0.25		FAA	76OYE 01
4.5			ICPES	80FLO 01		1.38	0.14		FAA	79GOD 01
4.5	0.05		ICPES	85HAR 01		1.4	0.16		TCGS	79AND 01
4.5	0.5	D	ITNA	78RYA 01		1.43			FAA	78GUI 01
4.5	0.5		ITNA	77CHA 01		1.43	0.04		RTNA	74ORV 01
4.5	0.6	35	IENA	80GLA 03		1.43	0.07	D	RTNA	81GAL 02
4.54	0.06		ICPES	84BOT 01		1.43	0.07		RTNA	81GAL 01
4.6			EXRF	78WEG 01		1.45			FAA	75POL 01
4.6	0.5		ITNA	78LAU 02		1.45	0.04		AA	75EPS 01
4.62	0.06		ICPES	80NAD 01		1.45	0.06		RTNA	84DEL 01
4.62	0.15		EXRF	78PEL 01		1.46			AE+AF	77FEL 01
4.65	0.15		ICPES	81CHU 01		1.46	0.05		AA	74RAI 01
4.69	0.14	D	NAA	79STE 01		1.5			POL	74MAI 01
4.69	0.14		ITNA	77ROW 03		1.5	0.07		TCGS	79FAI 01
4.69	0.14		ITNA	76STE 05		1.5	0.07	D	TCGS	80AND 01
4.7			OES	80WAL 01		1.5	0.09	7	AA	73TAL 01
4.7	0.3		ITNA	77MAE 01		1.5	0.09		FAA	74TAL 01
4.73	0.42		ITNA	81WAN 01		1.5	0.1		NAA	77JER 01
4.75	0.08	D	TCGS	80AND 01		1.5	0.1	D	PAA	77CHA 01
4.75	0.08		TCGS	79FAI 01		1.5	0.1		PAA	76CHA 01
4.8			ICPES	80NAD 01		1.5	0.15		FAA	74RAI 01
4.8	0.96		OES	76WEW 01		1.5	0.5		ICPES	81CHU 01
4.81			ICPES	84CLE 01		1.52	0.07		PAA	74CHA 01
4.9	0.2		AA	80STO 02		1.52	0.08		AF	75EPS 01
4.9	0.2		TCGS	79AND 01		1.53			AA	76WEW 01
5	1.1		ITNA	76OND 01		1.55			FAA	79SIL 01
5.04			XRF	78CAM 02		1.6	0.15	7	AE+AF	73TAL 01
5.09	0.56		14NAA	77VAN 01		1.6	0.15		FAE	74TAL 01
5.1	0.03		PAA	76KAT 02		1.6	0.2	6	TCGS	76GLA 01
5.1	0.05		PAA	76KAT 03		1.6	0.5		ICPES	80EPS 03
5.1	0.6		ITNA	76WEW 01		1.63	0.07	8	SSMS	80KOP 01
5.11	0.13		XRF	79SMI 01		1.69			AA	78GEL 01
5.21	0.2		ICPES	84NAD 01		1.7	0.2		AA	76OND 01
5.3	0.1		EXRF	77NIE 01		1.85			IDMS	75KLE 01
5.3	0.5		PAA	75OND 01		2.2	0.6	13	ICPES	84BOT 01
						9.5		13	ICPES	84BOT 01
						15			UU	80HEN 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ce (ug/g)</u>						<u>Cl (ug/g)</u>				
125			UU	80HEN 01		19.6	0.1		PAA	74CHA 01
129	10		ITNA	73SHE 01		20	2		ITNA	78NAD 02
136	5		14NAA	81WIL 01		20	2		ITNA	75NAD 02
136	8		14NAA	81WIL 02		25	7		PAA	76CHA 01
140			ICPES	80FLO 01		25	7	D	PAA	77CHA 01
140	10	D	ITNA	78RYA 01		32	10		ITNA	77CHA 01
140	10		ITNA	77CHA 01		32	10	D	ITNA	78RYA 01
141	7		ITNA	81WAN 01		40	8		ITNA	78MAC 01
145	5		ITNA	78LAU 02		40.6	14.4		ITNA	83LI 01
145	6		ITNA	76WEW 01		42			SSMS	83WEI 02
146			ITNA	82GLA 02		42			ITNA	78WEA 01
146	15		ITNA	75OND 01		42	10		ITNA	75OND 01
146	17		ITNA	76OND 01		50			UU	80HEN 01
148	6		ITNA	76RAG 01		52	15		ITNA	81WAN 01
148	7	35	ITNA	81GLA 02		56		35	ITNA	81GLA 03
149	4		XRF	79SMI 01		58	9		ITNA	77MAE 01
149	7	35	NAA	81GLA 04		185	44		ITNA	73SHE 01
149.6	2		ITNA	77ROW 03						
149.6	2	D	ITNA	77ROW 04						
150	2	D	NAA	79STE 01						
150.6	3.3		IENA	77ROW 04		25	3		ICPES	84NAD 01
152	10	D	PAA	77CHA 01		26			ICPES	80NAD 01
152	10		PAA	76CHA 01		32	1		ICPES	84BOT 01
152	15		ITNA	85FIL 01		32	2		AA	77MIT 01
153	1		PAA	76KAT 02		35	2		ITNA	76KUC 01
153	2		PAA	76KAT 03		35.4	2.8		PAA	74CHA 01
153	3	35	ITNA	81GLA 03		36.2	1.1		ITNA	76BLO 01
153	4		ITNA	84ODD 01		36.7	3.9		ITNA	75NAD 02
153	6		RTNA	84ODD 01		37	4		ITNA	78HAD 02
154			XRF	78CAM 02		38			ITNA	78WEA 01
154	8	35	IENA	80GLA 03		38			SSMS	83WEI 02
157	3.2		ICPES	81CHU 01		38	0.96		OES	76WEW 01
160	23		EXRF	77GIA 01		38	1		ITNA	85FIL 01
161	35		ITNA	78NAD 02		38	2	35	IENA	80GLA 03
161	35		ITNA	75NAD 02		38	2		ITNA	78MAC 01
169			ITNA	75MIL 01		38.6	3.7		ITNA	73SHE 01
176	4		ITNA	78MAC 01		39			AA	76WEW 01
200	100		OES	76WEW 01		39	2		ICPES	85HAR 01
210			SSMS	83WEI 02		39.4	1.2		ITNA	76RAG 01
210	34		SSMS	78SUG 02		39.8	0.9		ITNA	81WAN 01
						40	2	35	NAA	81GLA 04
						40	2		PAA	76CHA 01
						40	2		ITNA	76OND 01
						40	2		ITNA	73ABE 01
						40	2	D	PAA	77CHA 01
						40	4		FAA	76OYE 01
						40.1	0.6		ITNA	84GLA 02
						40.3	0.4		ITNA	77ROW 03
						40.3	0.4	D	NAA	79STE 01
						40.3	0.4	D	ITNA	77ROW 04
						41			ICPES	80FLO 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Co (ug/g) cont.</u>						<u>Cr (ug/g) cont.</u>				
41	0.6		IENA	77ROW 04		128	5	35	ITNA	81GLA 02
41	1		ITNA	78LAU 02		128	5	35	ITNA	81GLA 04
41	1	35	ITNA	81GLA 02		128.5	8.5	AA	77MIT 01	
41	1.2		ICPES	81CHU 01		129	3	D	NAA	79STE 01
41	2	35	ITNA	81GLA 03		129	3.9		ICPES	81CHU 01
41	3		ITNA	76WEW 01		129.2	2.7		ITNA	77ROW 03
41.5	1.2		ITNA	75OND 01		129.2	2.7	D	ITNA	77ROW 04
42			FAA	79SIL 01		130			AA	76WEW 01
42			ITNA	75MIL 01		130			SSMS	83WEI 02
42	1.6		ITNA	77CHA 01		130			UU	80HEN 01
42	1.6	D	ITNA	78RYA 01		130	4		ITNA	84GLA 02
42	3		PAA	76KAT 02		130	5	9	ITNA	78LAU 02
42	5		PAA	76KAT 03		131			EXRF	78WEG 01
42	6		AA	76OND 01		131	6		PAA	76CHA 01
45	16		14NAA	81WIL 01		131	6	D	PAA	77CHA 01
45	16		14NAA	81WIL 02		131	6.1		PAA	74CHA 01
46			ITNA	75KLE 01		131	8		ITNA	73ABE 01
46	10		AA	82HAR 01		131	8		EXRF	78PEL 01
48			ITNA	84CLE 01		131	9		ITNA	76KUC 01
50			UU	80HEN 01		131.7	4.6		RTNA	81GAL 01
54			ICPES	84CLE 01		131.7	4.6	D	RTNA	81GAL 02
						132	3.3		AA	74RAI 01
<u>Cr (ug/g)</u>						132	10		FAA	760WE 01
						132.3	0.35		RTNA	74MCC 01
96			ICPES	84SOB 01		134	9	35	ITNA	81GLA 03
103	10		AA	82HAR 01		135			ITNA	84CLE 01
104	4		ICPES	84NAD 01		135			AA	78GUI 01
110			ICPES	84CLE 01		135			AA	78WEG 01
112			XRF	78CAM 02		135	6	D	ITNA	78RYA 01
113			FAA	78GUI 01		135	6		ITNA	77CHA 01
113	1.5		ITNA	75NAD 02		135	14		IENA	77ROW 04
113	2		ITNA	78NAD 02		137	16		ITNA	81WAN 01
114			ICPES	80NAD 01		138			ITNA	75KLE 01
117	6		SSMS	78GUI 01		140	15		ITNA	78LAU 02
117	7		ITNA	76RAG 01		142	9		PAA	76KAT 02
118	6		ITNA	76OND 01		142	13		PAA	76KAT 03
118	8		ITNA	76WEW 01		150	13		OES	76WEW 01
120			OES	78SUG 01		159	115		EXRF	77GIA 01
120	4		AA	76OND 01		175		6	SSMS	78GUI 01
120	5		ITNA	78MAC 01		180			ITNA	75MIL 01
120	6		ICPES	85HAR 01		181			FAA	75POL 01
122	12		ITNA	73SHE 01						
123			ICPES	80FLO 01						
124	9		ITNA	85FIL 01						
124	14		XRF	79SMI 01						
125	9		ICPES	84BOT 01						
126	11		ITNA	76BLO 01						
127	6	D	NAA	74OND 01						
127	6		ITNA	75OND 01						
128			ITNA	78WEA 01						
128			AA	79SIL 01						

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cs (ug/g)</u>						<u>Cu (ug/g) cont.</u>				
0.63	0.06		PAA	74CHA 01		125	10		ITNA	77CHA 01
5.8	1.4		ITNA	78NAD 02		125	13		EXRF	78PEL 01
5.81	1.4		ITNA	75NAD 02		126	2		AA	82HAR 01
7.3	1		ITNA	78LAU 02		127			AA	78GEL 01
7.7	1.3		ITNA	76WEW 01		128	3.9		ICPES	81CHU 01
8	1		PAA	76CHA 01		128	6		ICPES	84BOT 01
8	1	D	PAA	77CHA 01		129			AA	76WEW 01
8.1	0.5	9	ITNA	78LAU 02		129			AA	78WEG 01
8.2	0.4		ITNA	84GLA 02		129	4		ICPES	85HAR 01
8.2	0.5		ITNA	76OND 01		129	5	8	SSMS	80KOP 01
8.2	0.9		IENA	76STE 05		130	2.2		AA	74RAI 01
8.3	0.4	35	ITNA	81GLA 02		130	5		AA	80STO 02
8.3	0.7		ITNA	85FIL 01		131			SSMS	78GUI 01
8.3	0.9		IENA	77ROW 03		131			FAA	78GUI 01
8.3	1	D	ITNA	78RYA 01		131			AE+AF	77FEL 01
8.3	1		ITNA	77CHA 01		132			ICPES	84CLE 01
8.4	0.2	D	NAA	79STE 01		133			XRF	75KLE 01
8.4	0.5		ITNA	77ROW 04		133	4		EXRF	77GIA 01
8.42	0.22		IENA	77ROW 04		134	11	6	PAA	82SEG 01
8.5	0.5		ITNA	78MAC 01		135	3		XRF	79SMI 01
8.6			ITNA	78WEA 01		136			ICPES	80NAD 01
8.6			SSMS	83WEI 02		136	6	35	RTNA	77GLA 01
8.6	0.8		ITNA	76RAG 01		137	7		ITNA	76BL0 01
8.6	1.1		ITNA	75OND 01		140	10		XRF	81COH 02
8.7	0.3	35	IENA	80GLA 03		140	20	6	PAA	82SEG 01
8.7	0.7	35	HAA	81GLA 04		140	20		PAA	80SEG 01
8.8	0.4	35	ITNA	81GLA 03		142	9		ITNA	73SHE 01
8.9	0.8		ITNA	81WAN 01		142	37		ICPES	84NAD 01
9.4			ITNA	75MIL 01		145			SSMS	78GUI 01
9.9	0.8		ITNA	73ABE 01		198	61		ITNA	81WAN 01
10			UU	80HEN 01						
10	1		14NAA	81WIL 02						
13.8	1.4		ITNA	73SHE 01						
<u>Cu (ug/g)</u>						7.6	2.4		ITNA	73SHE 01
						9	0.1		RTNA	84ODD 01
						9	2		ITNA	78MAC 01
70.2	1.8		AA	77MIT 01		9.1	0.1		ITNA	84ODD 01
110	11		OES	76WEW 01		9.4	0.5		ITNA	76STE 05
115	8		ITNA	77ROW 03		9.4	0.5		ITNA	77ROW 03
115	8		ITNA	76STE 05		9.4	0.5	D	NAA	79STE 01
115	8	D	NAA	79STE 01		10.2			ITNA	75MIL 01
119	5		AA	76OND 01		10.2			ITNA	81GLA 04
120			ICPES	80FLO 01		10.3	0.4	35	ITNA	81GLA 02
120			UU	80HEN 01		10.9			ITNA	78NAD 02
121			AA	79SIL 01		10.9			ITNA	75NAD 02
123			EXRF	78WEG 01		12			SSMS	83WEI 02
124			XRF	78CAM 02		12.1	0.6		ITNA	76OND 01
124			ICPES	84SOB 01		19	3		SSMS	78SUG 02
124	19		FAA	76OWE 01						
125			AA	78GUI 01						
125	10	D	ITNA	78RYA 01						

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Er (ug/g)</u>						<u>Fe (%)</u>				
<	100	L	OES	76NEW 01		4.23	0.3	PAA	76KAT 03	
<	300	L	OES	76NEW 01		4.24	0.19	PAA	76KAT 02	
2.1			SSMS	83WEI 02		4.4		AA	78GUI 01	
11	2		SSMS	78SUG 02		5.278	0.56	ITNA	73SHE 01	
89	3		RTNA	84ODD 01		5.53	0.12	ICPES	84NAD 01	
						5.6	0.2	ITNA	76NEW 01	
						5.6	2.8	OES	76NEW 01	
						5.7	0.3	ITNA	76KUC 01	
<u>Eu (ug/g)</u>						5.8		OES	78SUG 01	
1.9	0.2		ITNA	76OND 01		5.8		AA	78WEG 01	
2			ICPES	80FLO 01		5.8		ITNA	84CLE 01	
2	2	35	IENA	80GLA 03		5.8		IENA	80GLA 03	
2.3	0.1		ITNA	73ABE 01		5.8	0.3	5	IENA	80GLA 03
2.39	0.11		ITNA	76RAG 01		5.9	0.2	5	IENA	80GLA 03
2.42	0.16		ITNA	73SHE 01		5.91	0.16	IENA	77ROW 04	
2.44	0.19		ITNA	76STE 05		5.93	0.04	ICPES	85HAR 01	
2.49	0.15	35	ITNA	81GLA 02		5.94		XRF	78CAM 02	
2.5			ITNA	78WEA 01		5.96	0.16	XRF	79SMI 01	
2.5	0.16	35	ITNA	81GLA 04		6		XRF	76NEW 01	
2.5	0.4		ITNA	75OND 01		6		ICPES	80FLO 01	
2.56	0.07		ITNA	84GLA 02		6	0.2	ICPES	80EPS 03	
2.57	0.19		ITNA	77ROW 03		6	0.3	ITNA	76OND 01	
2.6	0.2		ITNA	76NEW 01		6	0.4	AA	79WEG 01	
2.6	0.2		ITNA	85FIL 01		6.03	0.16	ITNA	81WAN 01	
2.6	0.2		ITNA	81WAN 01		6.08	0.52	PAA	74CHA 01	
2.62	0.05		ITNA	75NAD 02		6.09	0.03	ITNA	84GLA 02	
2.62	0.05		ITNA	78NAD 02		6.1	0.1	TCGS	79FAI 01	
2.69	0.09		ITNA	77ROW 04		6.1	0.1	D	TCGS	80AND 01
2.69	0.09	D	NAA	79STE 01		6.1	0.2	D	PAA	77CHA 01
2.7	0.1		ITNA	78LAU 02		6.1	0.2	PAA	76CHA 01	
2.72	0.07		ITNA	84ODD 01		6.1	0.3	35	NAA	81GLA 04
2.79			ITNA	82GLA 02		6.14	0.07	ICPES	84BOT 01	
2.8	0.13		OES	76NEW 01		6.16	0.3	EXRF	78PEL 01	
2.8	0.3		RTNA	84ODD 01		6.17	0.41	ITNA	78NAD 02	
2.86			ITNA	75KLE 01		6.17	0.41	ITNA	75NAD 02	
2.9	0.2	35	ITNA	81GLA 03		6.2		EXRF	78WEG 01	
3	0.15		ICPES	81CHU 01		6.2		OES	80WAL 01	
3.1			ITNA	75MIL 01		6.2	0.04	ICPES	80NAD 01	
5			SSMS	83WEI 02		6.2	0.05	ITNA	77ROW 03	
5.3	1.2		SSMS	78SUG 02		6.2	0.05	D	ITNA	77ROW 04
						6.2	0.05	D	NAA	79STE 01
						6.2	0.1	EXRF	77NIE 01	
						6.2	0.1	AA	76OND 01	
10			UU	80HEN 01		6.2	0.1	AA	77MIT 01	
20			AA	76NEW 01		6.2	0.2	FAF	80EPS 04	
20	2		ISE	83BET 02		6.2	0.3	D	NAA	74OND 01
						6.2	0.3	ITNA	75OND 01	
						6.2	0.4	D	ITNA	78RYA 01
						6.2	0.4	ITNA	77CHA 01	
						6.2	0.6	XRF	81COH 02	
						6.22	0.08	TCGS	79AND 01	
						6.22	0.48	EXRF	77GIA 01	

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Fe (%) cont.</u>										
6.23	0.1		ITNA	78LAU 02		1.9			SSMS	83WEI 02
6.23	0.14	35	ITNA	81GLA 02		11			ITNA	75MIL 01
6.3	0.1		ITNA	78MAC 01		11.4	0.2		TCGS	79FAI 01
6.3	0.15		AA	82HAR 01		11.6	0.1		RTNA	84ODD 01
6.3	0.4	35	ITNA	81GLA 03		11.7	0.4		TCGS	79AND 01
6.32			ICPES	80NAD 01		11.9	0.2		ITNA	84ODD 01
6.35			ITNA	78WEA 01		12.1	0.36		ICPES	81CHU 01
6.35	0.12		ITNA	85FIL 01		17.5	0.3		TCGS	80AND 01
6.37			ITNA	75KLE 01		23	4		SSMS	78SUG 02
6.4			AA	79SIL 01						
6.4	0.15		14NAA	81WIL 02						
6.46			ICPES	84CLE 01						
6.46	0.14		ICPES	81CHU 01		19	1		XRF	79SMI 01
6.5			UU	80HEN 01		20			UU	80HEN 01
6.51	0.31		ITNA	73ABE 01		24			UU	78SIM 01
6.69			ITNA	75MIL 01		25	1.4		OES	76WEW 01
6.7		35	TCGS	78GLA 04		25.9	0.7		COLOR	84SHI 01
6.8	0.03		ITNA	76RAG 01		26	5		EXRF	77GIA 01
6.8	0.2		AA	80STO 02		26.8	2.6		ICPES	84NAD 02
6.95	0.15		14NAA	81WIL 01		36			SSMS	83WEI 02
7			AA	76WEW 01		131			FAA	75POL 01
						476	166		ITNA	73SHE 01
<u>Ga (ug/g)</u>										
34.3	1.9		ITNA	81WAN 01						
37	2		IENA	78WAN 01		1000			UU	80HEN 01
38.3	6.3		ITNA	73SHE 01		1200	400		TCGS	79AND 01
40	1		XRF	79SMI 01						
40.3	2	5	IENA	76STE 05						
40.7	1.2	D	NAA	79STE 01						
40.7	1.2		IENA	77ROW 03		0.03			UU	80HEN 01
40.7	1.2	5	IENA	76STE 05						
41	1	35	IENA	81GLA 04						
41	7		EXRF	77GIA 01						
43	1	35	IENA	80GLA 03						
43	1	35	IENA	81GLA 03		0.17			FD	80KHA 02
45	7		ITNA	76OND 01						
45	8		ITNA	85FIL 01						
48	6		COLOR	79LIK 01		< 1000	L	UU		80HEN 01
49			XRF	75KLE 01						
50			UU	80HEN 01						
58	10		FAA	76OWE 01						
68	14		OES	76WEW 01		4			SSMS	83WEI 02
72			ICPES	80FLO 01		6.5	0.7		ITNA	76WEW 01
						6.7	0.3		IENA	77ROW 03
						6.7	0.3	D	IENA	77ROW 04
						6.7	0.3	D	NAA	79STE 01
						7	0.4		ITNA	77ROW 04
						7.2	0.6		ITNA	76RAG 01
						7.4	0.5		ITNA	78LAU 02
						7.5			ITNA	78NAD 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Hf (ug/g) cont.</u>										
7.5	0.4		ITNA	78MAC 01		0.82			SSMS	83WEI 02
7.5	0.4		ITNA	85FIL 01		1.94	0.13		IENA	77ROW 03
7.5	0.5		ITNA	77CHA 01		1.94	0.13	D	NAA	79STE 01
7.5	0.5	D	ITNA	78RYA 01		1.94	0.13		IENA	76STE 05
7.52	0.02		ITNA	75NAD 02		1.98	0.01		RTNA	84ODD 01
7.6	0.2		ITNA	84GLA 02		1.99	0.07		ITNA	84ODD 01
7.62	0.56		ITNA	73SHE 01		3.6	0.8		SSMS	78SUG 02
7.7	0.1		ITNA	81WAN 01						
7.9			ITNA	78WEA 01						
7.9	0.4		ITNA	75OND 01						
8	0.4	35	ITNA	81GLA 02		<	0.5	L	UU	80HEN 01
8	0.4	35	NAA	81GLA 04		<	6	L	EXRF	77GIA 01
8.1	0.1	35	IENA	80GLA 03		2	1.2		ITNA	77MAE 01
8.2			ITNA	75MIL 01		2.8	1		PAA	77CHA 01
8.2	0.8		ITNA	73ABE 01		2.9			ITNA	78WEA 01
8.2	0.8		ITNA	76OND 01		2.9	1.2		PAA	75OND 01
10			UU	80HEN 01		3	1		ITNA	77CHA 01
10	2	35	ITNA	81GLA 03		3	1	D	ITNA	78RYA 01
10.8			ITNA	75KLE 01		3.4			SSMS	83WEI 02
<u>Hg (ng/g)</u>										
100			UU	80HEN 01		118	4	5	IENA	76STE 05
119	2		CVAA	80NAD 01		128	8	5	IENA	76STE 05
120	15		CVAA	82SUL 01		128	8	D	NAA	79STE 01
127	3		CVAA	75KLE 01		128	8		IENA	77ROW 03
130	30		PAA	76CHA 01		156	35		ITNA	73SHE 01
130	30		NAA	77JER 01		160	20		ITNA	81WAN 01
130	30	D	PAA	77CHA 01		270	140		ITNA	76RAG 01
134	4		CVAA	74RAI 01		280	30		PAA	74CHA 01
135	10		PAA	74CHA 01		290	60		PAA	76CHA 01
137	15	D	RTNA	81GAL 02		290	60	D	PAA	77CHA 01
137	15		RTNA	81GAL 01		320	80	D	ITNA	78RYA 01
141	12		FAA	77GLA 03		320	80		ITNA	77CHA 01
145			ITNA	78WEA 01		320	100		ITNA	75OND 01
145	6		RTNA	74ORV 01		3000	2000		EXRF	77GIA 01
145	6		RTNA	84DEL 01						
160	40		ITNA	77CHA 01						
160	40	D	ITNA	78RYA 01						
170	20	6	PAA	82SEG 01		<	200	L	UU	80HEN 01
200	20		PAA	80SEG 01		15.6	2.4		RTNA	77NAD 02
200	100	6	PAA	82SEG 01		18.6			ITNA	78WEA 01
550			XRF	76WEW 01		18.6	3.3		ITNA	73SHE 01
3700	1100		ITNA	73SHE 01		250	80		ITNA	77CHA 01
11000			XRF	78CAM 02		250	80	D	ITNA	78RYA 01
<u>In (ng/g)</u>										
<u>Ir (ng/g)</u>										

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>K (%)</u>						<u>K (%) cont.</u>				
1.29	0.09		ITNA	76KUC 01		1.9	0.5		14NAA	81WIL 01
			ICPES	80NAD 01		1.97		35	ITNA	81GLA 04
1.51	0.05		ITNA	78MAC 01		2.18	0.24		ITNA	73SHE 01
1.54	0.04		ITNA	76BLO 01		3.3	0.66		OES	76WEW 01
1.56			ICPES	84CLE 01						
1.58	0.15		ITNA	75OND 01						
1.59	0.05		PAA	76KAT 02						
1.59	0.05		PAA	76KAT 03		45	4.5		OES	76WEW 01
1.6			OES	80WAL 01		64	2		ITNA	78NAD 02
1.6	0.04		ICPES	81CHU 01		64.1	1.6		ITNA	75NAD 02
1.6	0.06		PAA	76CHA 01		68	2		ITNA	78MAC 01
1.6	0.06	D	PAA	77CHA 01		68	5		ICPES	85HAR 01
1.6	0.12		AA	80STO 02		70			UU	80HEN 01
1.61			ITNA	78WEA 01		71.9			ITNA	84GLA 02
1.63			XRF	78CAM 02		72	6		XRF	79SMI 01
1.63	0.06		ITNA	77MAE 01		74	4		ITNA	78LAU 02
1.64	0.01		AA	82HAR 01		74.8			ITNA	82GLA 02
1.65	0.09		ITNA	78LAU 02		75	4	35	ITNA	81GLA 03
1.66	0.04		XRF	79SMI 01		76	14		ITNA	76OND 01
1.67	0.06		EXRF	78PEL 01		76.4	4.5		ITNA	81WAN 01
1.67	0.07		ICPES	84BOT 01		77	8		ITNA	73SHE 01
1.68			AA	79SIL 01		78			XRF	78CAM 02
1.69		35	TCGS	78GLA 04		78			ICPES	80FLO 01
1.69	0.13	D	ITNA	78RYA 01		79	1.6		ICPES	81CHU 01
1.69	0.13		ITNA	77CHA 01		79	6	35	IENA	80GLA 03
1.7			ITNA	78KEL 02		80			ITNA	75MIL 01
1.7	0.2		ITNA	76OND 01		81	2		ITNA	76RAG 01
1.71	0.03		GAMMA	75OND 01		81	3	D	NAA	79STE 01
1.71	0.03		GAMMA	73ABE 01		81.2	3.2		IENA	76STE 05
1.71	0.04		AA	76OND 01		81.2	3.3		IENA	77ROW 03
1.71	0.1		ICPES	84NAD 01		82			ITNA	78WEA 01
1.72	0.09		ICPES	80NAD 01		82			ITNA	75KLE 01
1.73	0.18		ITNA	81WAN 01		82	2		ITNA	75OND 01
1.74	0.07		EXRF	77NIE 01		82	4		ITNA	73ABE 01
1.75			UU	80HEN 01		82	20		EXRF	77GIA 01
1.75	0.1		TCGS	79AND 01		83	0.9		ITNA	85FIL 01
1.75	0.18		ITNA	76RAG 01		84	2		RTNA	84ODD 01
1.76	0.05	D	TCGS	80AND 01		84	3.6		IENA	77ROW 04
1.76	0.05		TCGS	79FAI 01		84	3.6		ITNA	77ROW 03
1.76	0.19		ITNA	85FIL 01		85	3		ITNA	84ODD 01
1.77			ITNA	75MIL 01		85	4	D	ITNA	78RYA 01
1.78	0.23		ITNA	75NAD 02		85	4		ITNA	77CHA 01
1.78	0.24		ITNA	78NAD 02		85.3	3.8		ITNA	77ROW 04
1.8			ITNA	75KLE 01		86	2		ITNA	76WEW 01
1.8	0.1		ICPES	85HAR 01		91	7		ITNA	76STE 05
1.8	0.13		ITNA	77ROW 03		110	20		SSMS	78SUG 02
1.8	0.13	D	NAA	79STE 01		120			SSMS	83WEI 02
1.8	0.13		ITNA	76STE 05						
1.8	0.3		14NAA	81WIL 02						
1.81	0.15	35	ITNA	81GLA 03						
1.83	0.05	35	IENA	80GLA 03						

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Li (ug/g)</u>					<u>Mg (%) cont.</u>				
1.7	0.3		ICPES	81CHU 01	1.5	0.15		PAA	76CHA 01
80			AA	76WEW 01	1.5	0.2		TCGS	79FAI 01
140	9		OES	76WEW 01	1.5	0.2	D	TCGS	80AND 01
161	14		ICPES	84BOT 01	1.5	0.3		ITNA	76WEW 01
186			ICPES	84CLE 01	1.5	1.3		14NAA	81WIL 01
300			UU	80HEN 01	1.52	0.06		ITNA	75NAD 02
					1.52	0.06		ITNA	78NAD 02
<u>Lu (ug/g)</u>					1.597	0.806		ITNA	73SHE 01
					1.6	0.32		OES	76WEW 01
0.78			SSMS	83WEI 02	1.68	0.21		ITNA	77CHA 01
0.87			ITNA	82GLA 02	1.68	0.21	D	ITNA	78RYA 01
0.9	0.3		ITNA	81WAN 01	1.78	0.2		ITNA	76STE 05
0.94	0.09	D	ITNA	77ROW 04	1.78	0.2		ITNA	77ROW 03
0.94	0.09		ITNA	77ROW 03	1.78	0.2	D	NAA	79STE 01
0.94	0.09	D	NAA	79STE 01	1.8			ICPES	80FLO 01
1	0.1		ITNA	75OND 01	1.8			OES	80WAL 01
1	0.2		ITNA	76WEW 01	1.8			ITNA	78WEA 01
1.01	0.02		ITNA	78NAD 02	1.8	0.4		ITNA	75OND 01
1.01	0.02		ITNA	75NAD 02	2			UU	80HEN 01
1.1		35	ITNA	81GLA 03	2	0.4		ITNA	76RAG 01
1.1	0.15	D	ITNA	78RYA 01	2.08	0.43		ITNA	73ABE 01
1.1	0.15		ITNA	77CHA 01	2.1	0.5		14NAA	81WIL 02
1.11	0.22		ITNA	84GLA 11	2.19	0.35		ITNA	81WAN 01
1.2			ITNA	75MIL 01	2.4		35	TCGS	78GLA 04
1.56	0.01		RTNA	84ODD 01	6.3	0.3		ITNA	78MAC 01
1.68	0.06		ITNA	84ODD 01					
1.7	0.4		SSMS	78SUG 02					
2	0.05		ITNA	78LAU 02					
3.8	0.5		ITNA	73SHE 01	351		6	SSMS	78GUI 01
4	1		ITNA	78MAC 01	388			ICPES	84SOB 01
					420			ITNA	78KEL 02
<u>Mg (%)</u>					422.4	3.9		AA	77MIT 01
					440			AA	78WEG 01
0.84	0.05		AA	82HAR 01	460			ITNA	75KLE 01
1.01			ICPES	80NAD 01	460	26		OES	76WEW 01
1.2	0.1		AA	76OND 01	464	1		ITNA	78NAD 02
1.22			AA	79SIL 01	464	1.4		ITNA	75NAD 02
1.25	0.06		ICPES	85HAR 01	464	46		ITNA	76KUC 01
1.29	0.02		ICPES	80NAD 01	465			ICPES	84CLE 01
1.29	0.03		ICPES	84BOT 01	466	31		ITNA	73SHE 01
1.3	0.04		ICPES	84NAD 01	470	20		ICPES	85HAR 01
1.32	0.04		ICPES	81CHU 01	477	5		AA	76OND 01
1.34			ICPES	84CLE 01	478			FAA	78GUI 01
1.4			OES	78SUG 01	480	10		ITNA	76BLO 01
1.4	0.4		ITNA	78LAU 02	480	25	D	TCGS	80AND 01
1.4	0.4		ITNA	77MAE 01	480	25		TCGS	79FAI 01
1.44	0.02		PAA	76KAT 03	482			ICPES	80NAD 01
1.45	0.05		AA	80STO 02	483	12		ICPES	84NAD 01
1.48	0.01		PAA	74CHA 01	483	21		XRF	79SMI 01
1.5	0.01		PAA	76KAT 02	485			AA	79SIL 01
1.5	0.15	D	PAA	77CHA 01	488	14		ITNA	77ROW 03

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Mn (ug/g) cont.</u>						<u>Mo (ug/g)</u>				
488	14	D	NAA	79STE 01		0.5	0.08	D	PAA	77CHA 01
488	14		ITNA	76STE 05		0.5	0.08		PAA	76CHA 01
488	50		ITNA	81WAN 01		1.52	0.15		PAA	74CHA 01
489	11		ITNA	73ABE 01		20			ITNA	78WEA 01
490			SSMS	83WEI 02		20			UU	80HEN 01
490	14		ICPES	84BOT 01		22.3	1.6		14NAA	81WIL 02
491	10		PAA	76KAT 02		25	5		EXRF	77GIA 01
491	18		PAA	76KAT 03		25.3	1.6	D	NAA	79STE 01
492			AA	78GUI 01		25.3	1.6		IENA	77ROW 03
492	7		AA	82HAR 01		25.3	1.6	D	IENA	77ROW 04
493	4.1		AA	74RAI 01		26			SSMS	83WEI 02
495			ITNA	78WEA 01		26	2		ICPES	84BOT 01
495	15		PAA	76CHA 01		28	1		XRF	79SMI 01
495	15	D	PAA	77CHA 01		28	1	35	IENA	80GLA 03
495	25		PAA	74CHA 01		28	1	35	IENA	81GLA 03
496			OES	80WAL 01		28	1.3		14NAA	81WIL 01
496	19	D	NAA	74OND 01		32			ICPES	80NAD 01
496	19		ITNA	75OND 01		36	3	35	RTNA	78GLA 02
498	11	35	ITNA	81GLA 03		36	5		FAA	760WE 01
499	22	6	FAA	79GEL 01		37	1.3		OES	76WEW 01
499	25		ITNA	76OND 01						
500			OES	78SUG 01						
500			EXRF	78WEG 01						
500			UU	80HEN 01			<	1000	L	UU
500	15		ITNA	77CHA 01						80HEN 01
500	15	D	ITNA	78RYA 01						
500	17		EXRF	78PEL 01						
503	15		ITNA	77MAE 01		2603	156		ITNA	76KUC 01
504	25		ITNA	76WEW 01		2658	129		ITNA	73SHE 01
505	9	35	ITNA	81GLA 02		2800	300		ITNA	76BLO 01
505	14		ITNA	76RAG 01		2820	50		ITNA	78MAC 01
506			AA	76WEW 01		2830	136		ITNA	76STE 05
508			XRF	78CAM 02		2830	140	D	NAA	79STE 01
510			ICPES	80FLO 01		2830	140		ITNA	77ROW 03
510	10		ITNA	78LAU 02		2900			ICPES	80NAD 01
510	70		XRF	81COH 02		2900			OES	78SUG 01
513	15	35	IENA	80GLA 03		3000			AA	79SIL 01
516	16		ICPES	81CHU 01		3000			OES	80WAL 01
520	6		FAA	760WE 01		3000			UU	80HEN 01
520	20		ITNA	78MAC 01		3000	70		ICPES	81CHU 01
528		6	SSMS	78GUI 01		3000	100		ITNA	78LAU 02
528	104		EXRF	77GIA 01		3000	200		TCGS	79FAI 01
530	30		AA	80STO 02		3000	200	D	TCGS	80AND 01
531	14		EXRF	77NIE 01		3000	200		ICPES	84NAD 01
540			ITNA	75MIL 01		3052	264		ITNA	81WAN 01
570	24	6	FAA	79GEL 01		3070	80		ITNA	77MAE 01
						3100	200		ICPES	80NAD 01
						3100	300		ITNA	76OND 01
						3130			ITNA	84GLA 02
						3150	110		14NAA	81WIL 01
						3200			SSMS	83WEI 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Na (ug/g) cont.</u>						<u>Nd (ug/g) cont.</u>				
3200			ITNA	78WEA 01		69	7		ITNA	77CHA 01
3200	200		AA	76OND 01		69	7	D	ITNA	78RYA 01
3200	200		AA	82HAR 01		81			ITNA	75MIL 01
3200	200		ICPES	84BOT 01		90	13		SSMS	78SUG 02
3200	300	D	ITNA	78RYA 01		94	19		ICPES	81CHU 01
3200	300		ITNA	77CHA 01						
3200	400		ITNA	75OND 01						
3220	50	35	ITNA	81GLA 03						
3230			ICPES	84CLE 01			<	100	L	UU
3240	100		ITNA	76RAG 01						
3290	110		AA	80STO 02						
3300	100	35	ITNA	81GLA 02						
3300	100		ICPES	85HAR 01		69	7		IENA	77ROW 03
3300	150		PAA	76CHA 01		78			AA	76WEW 01
3300	150	D	PAA	77CHA 01		84	2	35	IENA	81GLA 04
3300	200		ITNA	78NAD 02		84	6	35	IENA	80GLA 03
3300	200		ITNA	75NAD 02		85			AA	78GUI 01
3330	170		14NAA	81WIL 02		88	2		ICPES	84BOT 01
3400			ITNA	75MIL 01		92	6		PAA	75OND 01
3400	300		ITNA	76WEW 01		92	9	6	PAA	82SEG 01
3400	300		PAA	74CHA 01		93			EXRF	78WEG 01
3600		35	TCGS	78GLA 04		93	5	8	SSMS	80KOP 01
3700	200		ITNA	73ABE 01		94			XRF	78CAM 02
3850	210		PAA	76KAT 03		94			ICPES	80FLO 01
3860	130		PAA	76KAT 02		95	9	D	ITNA	78RYA 01
9700	1900		OES	76WEW 01		95	9		ITNA	77CHA 01
						95	20		EXRF	78PEL 01
<u>Nb (ug/g)</u>						96	3		PAA	76KAT 02
						96	5		XRF	79SMI 01
	< 100	L	OES	76WEW 01		96	5		PAA	76KAT 03
7			UU	80HEN 01		96	5		ICPES	85HAR 01
26	1		XRF	79SMI 01		96.4	1.2	6	IDMS	74MOO 01
28	2		EXRF	77GIA 01		96.4	1.2	6	IDMS	74MOO 01
56			SSMS	83WEI 02		96.6	1	6	IDMS	74MOO 01
						96.8	3.2		PAA	74CHA 01
<u>Nd (ug/g)</u>						97	5		PAA	76CHA 01
						97	5	D	PAA	77CHA 01
57.8	1.6	D	ITNA	77ROW 04		98			POL	74MAI 01
57.8	1.6		ITNA	77ROW 03		98			FAA	80WAL 01
58	2	D	NAA	79STE 01		98	9	D	NAA	74OND 01
58	10		ITNA	81WAN 01		98.5	9.5		IENA	77ROW 04
60		35	IENA	81GLA 04		99			AA	79SIL 01
60			SSMS	83WEI 02		99	4		AF	80EPS 02
60	2	35	IENA	80GLA 03		99	9	D	NAA	79STE 01
60.5	1.5		ITNA	75NAD 02		99.7	3.3		AA	77MIT 01
61	2		ITNA	78NAD 02		100			UU	80HEN 01
62	2		TCGS	80AND 01		100			ICPES	84CLE 01
62.1	2.4		TCGS	79FAI 01		100	3		ICPES	81CHU 01
66	7		ITNA	76OND 01		100	5		ITNA	75NAD 02
67	2		RTNA	84ODD 01		100	5		ITNA	78NAD 02
69	4		ITNA	84ODD 01		100	7	6	PAA	82SEG 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ni (ug/g) cont.</u>						<u>Pb (ug/g)</u>				
100	7	AA	76OND	01		40		6	SSMS	78GUI 01
100	20	ITNA	76OND	01		46		13	ICPES	84BOT 01
101	3.3	AA	74RAI	01		55			FAA	75POL 01
101	7	EXRF	77GIA	01		62			AA	78GUI 01
105	3	14NAA	81WIL	01		62.8			FAA	78GUI 01
105	13	ITNA	75OND	01		64	13		ICPES	81CHU 01
106		FAA	78GUI	01		65			EXRF	78WEG 01
106	12	14NAA	81WIL	02		66	6		XRF	79SMI 01
109		XRF	75KLE	01		66	12		EXRF	78PEL 01
110		SSMS	83WEI	02		67			POL	74MAI 01
110	7	PAA	80SEG	01		68	4		PAA	80SEG 01
110	10	9	ITNA	78LAU	02	68	4	6	PAA	82SEG 01
120		OES	78SUG	01		68	5	13	ICPES	84BOT 01
120	7.5	OES	76WEW	01		68	6	8	SSMS	80KOP 01
121	21	ITNA	85FIL	01		68.8			POT	82CHR 01
128		ICPES	80NAD	01		69	4	6	PAA	82SEG 01
330		ICPES	84SOB	01		70			AA	79SIL 01
						70			AA	78GEL 01
<u>NO2 (ug/g)</u>						70		6	SSMS	78GUI 01
<	100	L	UU	80HEN	01	70.5			FAA	78SIE 01
						70.7	2.6		PAA	74CHA 01
						71	3		NAA	77JER 01
<u>NO3 (ug/g)</u>						71	3		PAA	76CHA 01
<	100	L	UU	80HEN	01	71	3	D	PAA	77CHA 01
						72	5		EXRF	77GIA 01
						74	4		FAA	76BLO 01
<u>O (%)</u>						74	4		FAA	75BLO 02
47.02	0.08	34	14NAA	80KHA	02	74	9		OES	76WEW 01
						75			OES	80WAL 01
<u>Os (ng/g)</u>						75	5	D	PAA	75OND 01
<	400	L	UU	80HEN	01	75			NAA	74OND 01
<	4000		RTNA	77NAD	02	76			AE+AF	77FEL 01
						77			ICPES	80NAD 01
						77	6		AA	80STO 02
<u>P (ug/g)</u>						78	2		IDMS	78CAR 02
750	50	ICPES	85HAR	01		78	2		AA	76OND 01
880		AA	76WEW	01		78	4		IDMS	75KLE 01
898		ICPES	80NAD	01		79.6	9.7		HAA	82NAD 01
910	30	ICPES	84BOT	01		80			UU	80HEN 01
1040	70	ICPES	84NAD	01		80	10		ICPES	85HAR 01
1090	26	ICPES	81CHU	01		81			ICPES	80FLO 01
1200		UU	80HEN	01		81			AA	78WEG 01
1300		SSMS	83WEI	02		82			AA	76WEW 01
1900	100	COLOR	80NAD	01		82	6		FAA	760WE 01
3000		35	TCGS	78GLA	04	82			SSMS	81WIL 02
						100			SSMS	83WEI 02
<u>Pb-21 (pCi/g)</u>										
						3.37	0.13	D	NM	81CAS 01
						3.37	0.13		NM	80CAS 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Pd (ng/g)</u>						<u>Rb (ug/g) cont.</u>				
<	2		RTNA	77NAD 02		124	10		ITNA	73ABE 01
<	1000	L	UU	80HEN 01		125			ITNA	78WEA 01
<	4000	L	EXRF	77GIA 01		125	4		EXRF	77NIE 01
						125	10		ITNA	75OND 01
<u>Pr (ug/g)</u>						126	10		PAA	75OND 01
						130	30		ITNA	76OND 01
<	100	L	OES	76WEW 01		136	6		ITNA	85FIL 01
24			ICPES	80FLO 01		137	4		14NAA	81WIL 01
28	6		SSMS	78SUG 02		150		UU		80HEN 01
40			SSMS	83WEI 02						
92	1		RTNA	84ODD 01		<u>Re (ng/g)</u>				
<u>Pt (ug/g)</u>						<	200	L	UU	80HEN 01
<	90	L	OES	76WEW 01		<u>Rh (ug/g)</u>				
0.4			UU	80HEN 01		<	0.5	L	UU	80HEN 01
0.451	0.011		RTNA	77NAD 01		<	4	L	EXRF	77GIA 01
1.38	0.28		RTNA	77NAD 02		<	30	L	OES	76WEW 01
<u>Rb (ug/g)</u>						<u>Ru (ug/g)</u>				
70	30		ITNA	81WAN 01						
95	1		PAA	76KAT 02		<	0.5	L	UU	80HEN 01
96	2		PAA	76KAT 03		<	30	L	OES	76WEW 01
100	10	9	ITNA	78LAU 02		0.258	0.02		RTNA	77NAD 02
102	5		14NAA	81WIL 02		3	2		EXRF	77GIA 01
105	10		ITNA	76RAG 01						
108	4	D	NAA	79STE 01		<u>S (ug/g)</u>				
108	4		EXRF	77GIA 01		2000			XRF	81COH 02
108.4	3.7		IENA	77ROW 03		3900	400		TCGS	79FAI 01
108.4	3.7	D	IENA	77ROW 04		3900	400	D	TCGS	80AND 01
110	2		XRF	79SMI 01		4000	400		TCGS	79AND 01
110	9		ITNA	77ROW 04		4400	100		TCGS	77JUR 01
110	22		OES	76WEW 01		4930	490	7	NM	83LI 01
111	7		ITNA	84GLA 02		5090	530	7	NM	83LI 01
111	13.5		ITNA	75NAD 02		7800			XRF	78CAM 02
111	14		ITNA	78NAD 02		9000	500		XRF	79SMI 01
112	20		ITNA	76WEW 01						
114			XRF	78CAM 02		<u>Sb (ug/g)</u>				
115	10		ITNA	78LAU 02		4	3		EXRF	77GIA 01
115	15		ITNA	73SHE 01		5			ICPES	82NYG 01
116	10		ITNA	77CHA 01		5.9	0.3		ITNA	81WAN 01
116	10	D	ITNA	78RYA 01		5.9	0.5	5	IENA	77ROW 04
117	6	35	IENA	80GLA 03		5.9	0.5	5	ITNA	77ROW 04
118	7	35	NAA	81GLA 04		5.96	0.61		HAA	82NAD 01
119	7	35	ITNA	81GLA 02		6	0.2		IENA	77ROW 03
120			XRF	75KLE 01		6	0.2	D	NAA	79STE 01
120			SSMS	83WEI 02		6.03	0.23	5	IENA	77ROW 04
120	10		PAA	76CHA 01		6.1	0.4	5	ITNA	77ROW 04
123	9	35	ITNA	81GLA 03						

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sb (ug/g) cont.</u>						<u>Sc (ug/g) cont.</u>				
6.2		35	ITNA	81GLA 03		26.5	0.2		ITNA	84GLA 02
6.4	0.2		ITNA	78LAU 02		26.7	0.2	D	ITNA	77ROW 04
6.5	0.2	35	RTNA	78GLA 02		26.7	0.2		ITNA	77ROW 03
6.6	0.3		ITNA	85FIL 01		26.7	0.7	D	NAA	79STE 01
6.72	0.35		ITNA	75NAD 02		26.8	0.2		ITNA	78MAC 01
6.72	0.35		ITNA	78NAD 02		26.9	0.3		ITNA	81WAN 01
6.9			ITNA	78WEA 01		26.9	1.4		ITNA	76OND 01
6.9			SSMS	83WEI 02		27			ITNA	78WEA 01
6.9	0.3		ITNA	76OND 01		27	0.5		ITNA	78LAU 02
6.9	0.5	D	ITNA	78RYA 01		27	0.6		ITNA	76RAG 01
6.9	0.5		ITNA	77CHA 01		27	1		ITNA	75OND 01
6.9	0.6		ITNA	76RAG 01		27	1		ITNA	73ABE 01
6.9	0.6		ITNA	75OND 01		27	2	D	PAA	77CHA 01
7			UU	80HEN 01		27	2		PAA	76CHA 01
7	1.1		PAA	75OND 01		27.5	2.4		ITNA	73SHE 01
7	1.2		PAA	76KAT 03		28	1	35	ITNA	81GLA 02
7.1	0.5	D	PAA	77CHA 01		28.3	0.7	35	ITNA	81GLA 04
7.1	0.5		PAA	76CHA 01		29	3		14NAA	81WIL 02
7.1	0.5		NAA	77JER 01		29.1			ITNA	75MIL 01
7.1	0.7		PAA	76KAT 02		30	1	35	ITNA	81GLA 03
7.14	0.56		PAA	74CHA 01		30	2		ITNA	85FIL 01
7.2	0.3	35	ITNA	81GLA 02		32			ITNA	75KLE 01
7.2	0.3	35	NAA	81GLA 04		41	5		14NAA	81WIL 01
7.2	0.8		ITNA	73ABE 01		45			SSMS	83WEI 02
7.3	0.3		FAA	78HAY 01						
7.4	0.3		ITNA	78MAC 01		<u>Se (ug/g)</u>				
7.7	0.5	35	IENA	80GLA 03		3.2			HAA	74BYR 02
7.8			ITNA	75KLE 01		4.5	0.7		ASV	76AND 01
7.9			ITNA	84CLE 01		5.5	3.4		ITNA	81WAN 01
8.3	1.8		14NAA	81WIL 02		8.7	1.8		ITNA	78MAC 01
8.4	3	13	ICPES	84BOT 01		8.76	0.48		HAA	82NAD 01
9.8	2.1		ITNA	76WEW 01		8.8			XRF	78CAM 02
12.08	0.86		ITNA	73SHE 01		8.8	0.7	9	ITNA	80WAN 01
17.4			FAA	75POL 01		8.8	1.2		ITNA	73ABE 01
54		13	ICPES	84BOT 01		8.9	0.6		ITNA	80WAN 01
						8.9	1.2		XRF	79SMI 01
						9			ICPES	82NYG 01
20			ICPES	80FLO 01		9	1.4		ITNA	76RAG 01
20			UU	80HEN 01		9	2	35	IENA	80GLA 03
20.7	2.1		PAA	74CHA 01		9.1	0.2		ITNA	78NAD 02
23	0.4		ITNA	76BLO 01		9.1	0.2		ITNA	75NAD 02
23	2.3		OES	76WEW 01		9.1	0.2		ITNA	81CAR 02
24	1		ITNA	76WEW 01		9.1	0.3	35	NAA	81GLA 04
24	2		ICPES	85HAR 01		9.1	1		RTNA	74ORV 01
25.1	0.5		ITNA	75NAD 02		9.2	2.6		ICPES	84BOT 01
25.1	0.5		ITNA	78NAD 02		9.35	0.03		GCMES	75KLE 01
25.5	2	D	ITNA	78RYA 01		9.35	0.03		GCMES	74TAL 02
25.5	2		ITNA	77CHA 01		9.35	0.03		DCPES	81CAR 02
25.6	0.5		IENA	77ROW 04		9.4			SSMS	83WEI 02
26	2	35	IENA	80GLA 03		9.48	0.8		PAA	74CHA 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Se (ug/g) cont.</u>					<u>Si (%) cont.</u>					
9.5	0.8		PAA	76CHA 01		22.6			AA	79SIL 01
9.5	0.8	D	PAA	77CHA 01		22.7	0.05		ICPES	84NAD 01
9.6	3.1		ITNA	76BLO 01		22.8	0.8		14NAA	81WIL 01
9.7			COLOR	74BYR 02		23	1		EXRF	77NIE 01
9.8			ITNA	78WEA 01		23	6		14NAA	76BLO 01
9.8	0.5	6	PAA	82SEG 01		23.5	0.5	35	IENA	80GLA 03
9.8	1		ITNA	77CHA 01		24.5	1.1		TCGS	79AND 01
9.8	1	D	ITNA	78RYA 01						
10			UU	80HEN 01						
10	0.5	9	ITNA	78LAU 02						
10	0.5	8	SSMS	80KOP 01		10.05	0.58		ITNA	73SHE 01
10	0.6		RTNA	80KNA 01		10.4	0.9		IENA	77ROW 04
10	0.9		PAA	80SEG 01		11	1		ITNA	78MAC 01
10	0.9	6	PAA	82SEG 01		11.4	1.6		IENA	76STE 05
10	2		ITNA	76OND 01		11.8	1.6		IENA	77ROW 03
10.1	2.2		ITNA	76WEW 01		12.1	0.4		TCGS	79FAI 01
10.2			HAA	80WAL 01		12.1	0.4	D	TCGS	80AND 01
10.2	1.4		ITNA	75OND 01		12.1	1	D	ITNA	78RYA 01
10.2	1.4	D	NAA	74OND 01		12.1	1		ITNA	77CHA 01
10.3	0.7	D	RTNA	81GAL 02		12.1	1.4	D	NAA	79STE 01
10.3	0.7		RTNA	81GAL 01		12.1	1.4		ITNA	77ROW 04
10.6	1		ITNA	78LAU 02		12.3	0.6		RTNA	84ODD 01
10.6	1.3		ITNA	77ROW 04		12.4			ITNA	78WEA 01
10.7	0.4		ITNA	85FIL 01		12.4	0.5		ITNA	73ABE 01
10.8	0.8	D	NAA	79STE 01		12.4	0.9		ITNA	75OND 01
10.8	0.8	D	IENA	77ROW 04		12.8	0.6		ITNA	76WEW 01
10.8	0.8		IENA	77ROW 03		12.9	0.3		ITNA	84ODD 01
11	1		EXRF	77GIA 01		13			ITNA	84GLA 02
11	3		ITNA	76KUC 01		13	0.3		TCGS	79AND 01
12.7	1.8		ITNA	73SHE 01		13	0.7		ITNA	76RAG 01
13.3			ITNA	84CLE 01		13	1.3		ITNA	85FIL 01
35	13		14NAA	81WIL 02		13.2			ITNA	82GLA 02
35	13		14NAA	81WIL 01		13.4	0.7		ITNA	76OND 01
						13.5	0.5		ITNA	78LAU 02
						13.6	0.88		ITNA	75NAD 02
						13.6	0.9		ITNA	78NAD 02
16			OES	78SUG 01		14.9	1	35	ITNA	81GLA 03
17	3.4		OES	76WEW 01		15			ITNA	75KLE 01
17.7		35	TCGS	78GLA 04		15.8	0.3		ICPES	81CHU 01
20	1.6		PAA	76CHA 01		17			SSMS	83WEI 02
20	1.6	D	PAA	77CHA 01		20	3		SSMS	78SUG 02
20.4			ICPES	80NAD 01						
20.9			UU	80HEN 01						
21	2		PAA	75OND 01						
21.5	1.4		XRF	79SMI 01						
21.8	0.3		TCGS	80AND 01						
21.8	0.3		TCGS	79FAI 01						
21.9			XRF	78CAM 02						
22	1	35	AA	81GLA 03						
22.4	0.3		ICPES	80NAD 01						
22.4	1.6		14NAA	81WIL 02						

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Sn (ug/g)</u>					<u>Sr (ug/g) cont.</u>				
<	5		ICPES	84CLE 01	1410	400		14NAA	77VAN 01
2.8			SSMS	83WEI 02	1430	30		XRF	79SMI 01
3			UU	80HEN 01	1430	60	5	IENA	76STE 05
5	2		EXRF	77GIA 01	1430	60	D	NAA	79STE 01
5.7	0.6		NM	81IMU 01	1460	280		ITNA	85FIL 01
6.7	1.4		XRF	79SMI 01	1480	50		ITNA	77MAE 01
10	5		OES	76WEW 01	1480	60		IENA	77ROW 03
10.2	1.4		ITNA	77CHA 01	1480	60		ITNA	77ROW 04
10.2	1.4	D	ITNA	78RYA 01	1500			UU	80HEN 01
12	1		PAA	76CHA 01	1500	180	D	ITNA	78RYA 01
12	1	D	PAA	77CHA 01	1500	180		ITNA	77CHA 01
12.5	1.2		PAA	74CHA 01	1500	200		ITNA	78LAU 02
12.7	0.82		HAA	82NAD 01	1510	60	5	IENA	80GLA 03
740	210		ITNA	73SHE 01	1520	35		IENA	77ROW .04
					1541	188		ITNA	81WAN 01
<u>SO4 (%)</u>					1600	100	9	ITNA	78LAU 02
0.98			UU	80HEN 01	1620			ICPES	80FLO 01
					1700	300		ITNA	75OND 01
					1900	200		ITNA	73ABE 01
<u>Sr (ug/g)</u>					2300	1100		OES	76WEW 01
					8000			XRF	76WEW 01
126			EXRF	78WEG 01	<u>Ta (ug/g)</u>				
869	33		ITNA	73SHE 01	1.6			ITNA	75KLE 01
1200	300		ITNA	76STE 05	1.74	0.1	35	ITNA	81GLA 02
1240	30		ICPES	84BOT 01	1.74	0.12	35	NAA	81GLA 04
1244	6		PAA	76KAT 02	1.8			ITNA	78WEA 01
1244	9		PAA	76KAT 03	1.8			IENA	80GLA 03
1250	230		ITNA	76RAG 01	1.8			ITNA	76OND 01
1256	37		EXRF	78PEL 01	1.8	0.2	35	ITNA	75OND 01
1260	35		IENA	81GLA 03	1.8	0.3		ITNA	75OND 01
1260	30	5	IENA	80GLA 03	1.8	0.3		ITNA	75OND 01
1300	35		IENA	81GLA 04	1.81	0.08		ITNA	84GLA 02
1300	200		ITNA	76OND 01	1.84	0.09		ITNA	85FIL 01
1301			XRF	75KLE 01	1.9	0.1		ITNA	78LAU 02
1310	50		14NAA	81WIL 01	1.9	0.2	35	ITNA	81GLA 03
1310	60		14NAA	81WIL 02	1.9	0.25	D	ITNA	78RYA 01
1340			AA	79SIL 01	1.9	0.25		ITNA	77CHA 01
1340	70		ICPES	85HAR 01	2.0			UU	80HEN 01
1340	100		ITNA	78MAC 01	2.00	0.06		IENA	77ROW 03
1342	20		EXRF	77GIA 01	2.00	0.06	D	NAA	79STE 01
1360	110	5	IENA	76STE 05	2.00	0.06	D	IENA	77ROW 04
1370	120	D	PAA	77CHA 01	2.00	0.1		ITNA	78MAC 01
1370	120		PAA	76CHA 01	2.00	0.2		ITNA	76RAG 01
1373	95		PAA	74CHA 01	2.01	0.14		ITNA	77ROW 04
1375	28		ICPES	81CHU 01	2.04	0.03		ITNA	78NAD 02
1380			ICPES	84CLE 01	2.04	0.03		ITNA	75NAD 02
1390			ITNA	75MIL 01	2.1	0.2		ITNA	81WAN 01
1390			XRF	78CAM 02	2.2			ITNA	75MIL 01
1400			SSMS	83WEI 02	2.74	0.25		ITNA	73SHE 01
1406	80		ITNA	75NAD 02	3.5	0.3		ITNA	73ABE 01
1406	80		ITNA	78NAD 02					

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Tb (ug/g)</u>					<u>Th (ug/g) cont.</u>					
0.22	0.04		ITNA	73SHE 01		24	2	35	RTNA	78GLA 02
1.2	0.2		ITNA	78MAC 01		24	2		ITNA	76OND 01
1.5	0.3		ITNA	81WAN 01		24.4	2.2		ITNA	75OND 01
1.5	0.4		ITNA	76OND 01		24.5	0.4		ITNA	84GLA 02
1.53	0.11		ITNA	84GLA 02		25	0.9	35	NAA	81GLA 04
1.7	0.8		ITNA	85FIL 01		25	1	35	ITNA	81GLA 02
1.8			ITNA	75MIL 01		25	2		ITNA	73SHE 01
1.87	0.15		ITNA	76RAG 01		26			ITNA	75MIL 01
1.9			SSMS	83WEI 02		26			ITNA	75KLE 01
1.9	0.1		ITNA	78LAU 02		26			DNA	75MIL 01
1.9	0.3		ITNA	75OND 01		26.2	1.3		GAMMA	73ABE 01
1.99	0.16		ITNA	77ROW 04		26.2	1.3		GAMMA	75OND 01
2	0.1	35	NAA	81GLA 04		28			SSMS	83WEI 02
2	0.1	35	IENA	80GLA 03		28	2		ITNA	73ABE 01
2	0.25	D	ITNA	78RYA 01		32.2	0.2		ITNA	78NAD 02
2	0.25		ITNA	77CHA 01		32.2	0.2		ITNA	75NAD 02
2	0.3		ITNA	73ABE 01						
2.01	0.06	D	IENA	77ROW 04						
2.01	0.06		IENA	77ROW 03						
2.01	0.06	D	NAA	79STE 01		2.23	0.05		NM	80CAS 01
2.4	0.1		ITNA	84ODD 01		2.23	0.05	D	NM	81CAS 01
2.5	0.1		RTNA	84ODD 01						
3.12	0.02		ITNA	75NAD 02						
3.12	0.02		ITNA	78NAD 02						
3.3	0.5		SSMS	78SUG 02						
						3.74	0.17	D	NM	81CAS 01
						3.74	0.17		NM	80CAS 01
<u>Te (ug/g)</u>					<u>Th-228 (pCi/g)</u>					
<	0.5	L	UU	80HEN 01						
<	5	L	EXRF	77GIA 01						
0.92	0.05		HAA	82NAD 01		2.45	0.08	D	NM	81CAS 01
2.3	0.3		PAA	76CHA 01		2.45	0.08		NM	80CAS 01
2.3	0.3	D	PAA	77CHA 01						
2.32	0.2		PAA	74CHA 01						
9.9	1.1	35	RTNA	75GLA 01						
<u>Th (ug/g)</u>					<u>Th-232 (pCi/g)</u>					
<	0.5	L	UU	80HEN 01						
<	5	L	EXRF	77GIA 01						
0.92	0.05		HAA	82NAD 01		2.45	0.08	D	NM	81CAS 01
2.3	0.3		PAA	76CHA 01		2.45	0.08		NM	80CAS 01
2.3	0.3	D	PAA	77CHA 01						
2.32	0.2		PAA	74CHA 01						
9.9	1.1	35	RTNA	75GLA 01						
<u>Te (ug/g)</u>					<u>Ti (ug/g)</u>					
20			UU	80HEN 01		3000			XRF	76WEW 01
21	3		EXRF	77GIA 01		6000			UU	80HEN 01
22.8	0.5		ITNA	76BLO 01		6000	400		ITNA	78MAC 01
23	2		ITNA	85FIL 01		6300	200		OES	78SUG 01
23.6	0.8		ITNA	76RAG 01		6420				
23.8	0.4		ITNA	77ROW 04		6600	300			
24	0.5		IENA	77ROW 03		6800	200			
24	0.5	D	IENA	77ROW 04		6800	1100		ICPES	84NAD 01
24	0.5	D	NAA	79STE 01		6960		35	ITNA	76OND 01
24	0.8		ITNA	81WAN 01		7000	100	35	IENA	80GLA 03
24	1	35	ITNA	81GLA 03		7000	300		ITNA	77ROW 03
24	1		ITNA	78LAU 02		7000	300		ITNA	76STE 05
24	1	35	IENA	80GLA 03		7000	300	D	NAA	79STE 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ti (ug/g) cont.</u>						<u>Tm (ug/g)</u>				
7000	700		ITNA	76WEW 01		0.45			SSMS	83WEI 02
7070	180		ICPES	81CHU 01		1.3			ITNA	75MIL 01
7100	100		ICPES	80NAD 01		1.3	0.3		SSMS	78SUG 02
7150	1200		ITNA	76RAG 01		1.36	0.02		RTNA	84ODD 01
7200	200	35	NAA	81GLA 03		1.43	0.04		ITNA	84ODD 01
7200	200		TCGS	79FAI 01						
7200	200	D	TCGS	80AND 01						
7200	1400		OES	76WEW 01						
7210	95		TCGS	79AND 01		8.4	0.56		ITNA	73SHE 01
7230	400		PAA	74CHA 01		8.6	1	35	FLUOR	78GLA 01
7250	360	D	PAA	77CHA 01		9	6		EXRF	77GIA 01
7250	360		PAA	76CHA 01		10.5	1		ITNA	76RAG 01
7300			XRF	78CAM 02		10.6			ITNA	81WAN 01
7300	150		14NAA	81WIL 01		10.6	0.6	35	IENA	78GLA 01
7300	280		ITNA	77CHA 01		11	0.4	6	PAA	82SEG 01
7300	280	D	ITNA	78RYA 01		11.1	1.7		ITNA	76OND 01
7300	400		PAA	75OND 01		11.3	0.3		ITNA	75NAD 02
7330			ICPES	80FLO 01		11.3	0.3		ITNA	78NAD 02
7360	344		EXRF	78PEL 01		11.3	0.3	35	DNA	78GLA 01
7400			ITNA	78WEA 01		11.5	0.5	35	IENA	80GLA 03
7400	300		ITNA	75OND 01		11.5	0.5	35	DNA	81GLA 03
7400	500		ITNA	78LAU 02		11.7			DNA	75MIL 01
7400	800		AA	76OND 01		11.7	2		IDMS	78CAR 02
7500			XRF	78WEG 01		11.8			IDMS	75KLE 01
7500			ICPES	80NAD 01		11.9	0.4	6	PAA	82SEG 01
7500	500	35	ITNA	81GLA 02		11.9	0.6		PAA	80SEG 01
7600	200		14NAA	81WIL 02		12			ITNA	78WEA 01
7600	800		ITNA	73ABE 01		12	0.5		GAMMA	75OND 01
7660	70		PAA	76KAT 02		12	0.5		GAMMA	73ABE 01
7660	100		PAA	76KAT 03		12	0.5	D	NAA	74OND 01
7700	300		XRF	79SMI 01		12.1	0.8	13	PAA	81SEG 01
8140			ICPES	84CLE 01		12.1	2	35	RTNA	75GLA 01
8200	1100		ITNA	81WAN 01		12.2	0.5	D	NAA	79STE 01
8600	1100		EXRF	77GIA 01		12.2	0.6		IENA	77ROW 04
8700			AA	76WEW 01		12.2	1	13	PAA	81SEG 01
8900	752		ITNA	73SHE 01		12.4	0.6		IENA	77ROW 03
						12.7	0.5	D	NAA	79STE 01
						12.7	0.5		IENA	76STE 05
						12.8			ITNA	80EDD 01
2			UU	80HEN 01		13			SSMS	83WEI 02
3.5	0.5		PAA	80SEG 01		13.5	1.2		ITNA	76STE 05
3.5	0.5	6	PAA	82SEG 01		13.8			ITNA	75MIL 01
3.64	0.34		PAA	74CHA 01		15			UU	80HEN 01
3.7	0.4		PAA	76CHA 01						
3.7	0.4	D	PAA	77CHA 01						
3.8	0.27	8	SSMS	80KOP 01						
3.8	0.5	6	PAA	82SEG 01		4.07	0.12	D	NM	81CAS 01
5			AA	76WEW 01		4.07	0.12		NM	80CAS 01
5.3			POT	82CHR 01						
18	6		14NAA	81WIL 01						
18	6		14NAA	81WIL 02						

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>U-235 (pCi/g)</u>						<u>V (ug/g) cont.</u>					
0.179	0.012	NM	80CAS	01		237	9	ITNA	77MAE	01	
0.179	0.012	D	NM	81CAS	01	237	20	NAA	79STE	01	
<u>U-238 (pCi/g)</u>						237	20	ITNA	76STE	05	
4.01	0.04	D	NM	81CAS	01	240		ITNA	77ROW	03	
4.01	0.04	NM	80CAS	01		270	60	ITNA	75KLE	01	
<u>V (ug/g)</u>						271	6	SSMS	78GUI	01	
151	6	SSMS	78GUI	01		290	80	ITNA	76RAG	01	
174	55	XRF	79SMI	01		295	156	EXRF	77GIA	01	
182		XRF	78CAM	02		410		AA	76WEW	01	
190	50	TCGS	79FAI	01		<u>W (ug/g)</u>					
190	50	D	TCGS	80AND	01	3.8	0.7	ITNA	81WAN	01	
196	10	ITNA	78MAC	01		3.9	0.4	NAA	79STE	01	
200		UU	80HEN	01		3.9	0.4	IENA	77ROW	04	
200	34	EXRF	78PEL	01		4	0.4	IENA	77ROW	03	
201	6	FAA	76OWE	01		4.2	0.4	IENA	76STE	05	
204	15	ITNA	76BLO	01		4.5	1	D	ITNA	78RYA	01
208	12	PAA	74CHA	01		4.5		ITNA	77CHA	01	
210		OES	78SUG	01		4.6		ITNA	78WEA	01	
210		SSMS	83WEI	02		4.6		SSMS	83WEI	02	
210	12	D	PAA	77CHA	01	4.6	1.6	ITNA	75OND	01	
210	12	PAA	76CHA	01		4.8	1.5	ITNA	76OND	01	
214	12	ICPES	84NAD	01		4.9	0.7	35	RENA	81GLA	03
216		AA	78GUI	01		5		UU	80HEN	01	
216		EXRF	78WEG	01		5	1	35	IENA	80GLA	03
219		ICPES	80NAD	01		5.2	0.3	35	RTNA	78GLA	02
220	15	D	ITNA	78RYA	01	5.5	1.5	ITNA	76RAG	01	
220	15	ITNA	73ABE	01		5.8	0.3	35	NAA	81GLA	04
220	15	ITNA	77CHA	01		6	1	ITNA	78MAC	01	
220	20	35	ITNA	81GLA	03	12.7	1.1	ITNA	73SHE	01	
221		ITNA	78WEA	01		<u>Y (ug/g)</u>					
222	3	ICPES	84BOT	01		30		UU	80HEN	01	
223	9.9	ITNA	75NAD	02		44	4.2	OES	76WEW	01	
223	10	ITNA	78NAD	02		56		SSMS	83WEI	02	
224	6.7	ICPES	81CHU	01		60	5	EXRF	77GIA	01	
225	9	ICPES	85HAR	01		60	8	PAA	77CHA	01	
225	20	ITNA	76WEW	01		62	4	ICPES	85HAR	01	
226		FAA	78GUI	01		62	10	PAA	75OND	01	
230	10	ITNA	78LAU	02		65		ICPES	80FLO	01	
230	10	35	ITNA	81GLA	02	66		XRF	78CAM	02	
230	10.6	ITNA	73SHE	01		66	2	PAA	76KAT	03	
230	12	OES	76WEW	01		66	1	PAA	76KAT	02	
230	30	35	IENA	80GLA	03	67		XRF	79SMI	01	
233		ICPES	80FLO	01		68	1	SSMS	78SUG	02	
234	34	ITNA	81WAN	01		68	16	14NAA	81WIL	01	
235	13	D	NAA	74OND	01	150	7	14NAA	81WIL	02	
235	15	ITNA	75OND	01		150	15				
236		ICPES	84CLE	01							

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Yb (ug/g)</u>						<u>Zn (ug/g) cont.</u>				
4.7	0.4		ITNA	78MAC 01		204	12	35	FAA	81GLA 03
4.8	0.6		ITNA	76WEW 01		204	13	5	IENA	80GLA 03
5.5	0.3		ITNA	78LAU 02		205	10	6	PAA	82SEG 01
5.5	1.4		ITNA	78NAD 02		205	20		PAA	80SEG 01
5.53	0.14		ITNA	75NAD 02		206			ICPES	84CLE 01
5.7	0.56		OES	76WEW 01		206	7.3		ITNA	81WAN 01
5.7	0.6		ITNA	76OND 01		207			ITNA	73WEA 01
5.9	0.3		ITNA	76RAG 01		208			XRF	75KLE 01
5.9	0.3		IENA	77ROW 04		208	9.5		AA	80STO 02
5.9	0.4		ITNA	84GLA 11		208.1	24		ITNA	74GAL 01
6.1	0.18		ICPES	81CHU 01		208.2	3.6		AA	77MIT 01
6.2	0.2	5	ITNA	77ROW 04		210			SSMS	83WEI 02
6.2	3.4		ITNA	73SHE 01		210			OES	78SUG 01
6.6	0.4	D	ITNA	77ROW 04		210			ICPES	80NAD 01
6.6	0.4	D	NAA	79STE 01		210	36		OES	76WEW 01
6.6	0.4		ITNA	77ROW 03		211			ICPES	80EPS 03
6.77	0.06		RTNA	84ODD 01		212			ICPES	80FLO 01
			ITNA	75MIL 01		212	7		XRF	79SMI 01
6.8	0.1		ITNA	84ODD 01		212	14		ITNA	75NAD 02
7			ICPES	80FLO 01		212	14		ITNA	78NAD 02
7	3		ITNA	75OND 01		212	20		FAA	76OWE 01
7.2	2.1	D	ITNA	78RYA 01		213			ICPES	84SOB 01
7.2	2.1		ITNA	77CHA 01		213.5	1		XRF	74GAL 01
8			SSMS	83WEI 02		214			AA	78GEL 01
8	0.5	35	ITNA	81GLA 03		214	2		AA	75EPS 01
8.4	0.6		ITNA	81WAN 01		214	2		AF	75EPS 01
8.9	0.9		ITNA	73ABE 01		214	16		PAA	74CHA 01
9	1.4		SSMS	78SUG 02		215	20		PAA	76CHA 01
						215	20	D	PAA	77CHA 01
<u>Zn (ug/g)</u>						215	20		NAA	77JER 01
						216			FAA	80WAL 01
180.7	4		AA	74GAL 01		216	2.4		AA	74RAI 01
195	23		RTNA	74ORV 01		216	14		EXRF	77GIA 01
197	7		ICPES	84NAD 01		216	25	D	NAA	74OND 01
198			AA	78GUI 01		216	25		PAA	75OND 01
199	7		ICPES	84BOT 01		218	33		AA	82HAR 01
200			UU	80HEN 01		219	4		ICPES	79EPS 01
200			EXRF	78WEG 01		220	5		ITNA	76OND 01
200	8		IENA	77ROW 04		220	10	6	PAA	82SEG 01
200	10	9	ITNA	78LAU 02		220	130		ITNA	76BLO 01
200	10		EXRF	78PEL 01		221			AA	79SIL 01
200	20		ITNA	77CHA 01		221	16	5	IENA	80GLA 03
200	20		ITNA	78LAU 02		221	16	35	NAA	81GLA 04
200	20	D	ITNA	78RYA 01		228	6.9		ICPES	81CHU 01
200.5	4		RTNA	74GAL 01		230	40		ITNA	76RAG 01
201			AE+AF	77FEL 01		232	9		ICPES	85HAR 01
201	6	D	ITNA	77ROW 04		234			AA	78WEG 01
201	6	D	NAA	79STE 01		250			AA	76WEW 01
201	6		ITNA	77ROW 03						
201	8		AA	76OND 01						
202			XRF	78CAM 02						

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Zn (ug/g) cont.</u>					
270		6	SSMS	78GUI 01	
270	30		ITNA	78MAC 01	
283		6	SSMS	78GUI 01	
308	75		ITNA	76WEW 01	
700	220		ITNA	73SHE 01	
<u>Zr (ug/g)</u>					
160	34		OES	76WEW 01	
182	76		ITNA	76RAG 01	
200			UU	80HEN 01	
223	6.7		ICPES	81CHU 01	
286	8	35	IENA	81GLA 04	
288			ICPES	80FLO 01	
290	7		EXRF	77GIA 01	
290	20	5	IENA	80GLA 03	
298	6		PAA	76KAT 02	
298	10		PAA	76KAT 03	
300	20	D	PAA	77CHA 01	
300	20		PAA	76CHA 01	
301	20		PAA	75OND 01	
301	22		PAA	74CHA 01	
305			XRF	78CAM 02	
310	20		ITNA	77CHA 01	
310	20	D	ITNA	78RYA 01	
310	20	9	ITNA	78LAU 02	
310	70		IENA	77ROW 03	
310	70	D	IENA	77ROW 04	
310	70	D	NAA	79STE 01	
311	8		XRF	79SMI 01	
340	50	5	IENA	80GLA 03	
380	20		14NAA	81WIL 02	
400			SSMS	83WEI 02	
410			ITNA	77ROW 04	
410	20		14NAA	81WIL 01	
500			ITNA	75MIL 01	
640	140		ITNA	73SHE 01	

TABLE 1633A-1: COMPILED DATA FOR NBS SRM 1633A TRACE ELEMENTS IN COAL FLY ASH (revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		AA		NAA		ICPES		XRF		OTHER METHODS	
		Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)
Ag	ng/g	---		< 300		---		---		< 300		---		---		---		---	
Al	%	14.3 ± 1.0		14.4 ± 0.7	(27)	14.4		13 - 16.5		14.5	(1)	14.1 ± 0.3	(9)	14.3 ± 0.6	(7)	15.7 ± 1.2	(7)	15	(1) CPAA
Al	%	---		---		---		---		---		---		---		---		13.8	(1) ICPMS
Al	%	---		---		---		---		---		---		---		---		14.15	(2) TCGS
As	ug/g	145 ± 15		146 ± 4	(26)	145		138.4 - 153		144 ± 6	(8)	146 ± 2	(11)	147 ± 9	(3)	149 ± 4	(3)	141	(1) AE-AF
As	ug/g	---		---		---		---		---		---		---		---		148	(1) ICPMS
As	ug/g	---		---		---		---		---		---		---		---		138	(1) POL
B	ug/g	---		40.3 ± 2.1	(7)	39.2		37.9 - 44		---		---		39	(1)	---		44	(1) OES
B	ug/g	---		---		---		---		---		---		---		---		39.8 ± 1.6	(5) TCFS
Ba	ug/g	1500		1420 ± 100	(23)	1440		1210 - 1600		---		1390 ± 120	(17)	1490 ± 80	(5)	1400	(2)	---	
Be	ug/g	12		12.8 ± 0.6	(11)	13		12 - 13.6		13.0	(2)	---		12.8 ± 0.6	(7)	---		12	(1) OES
Be	ug/g	---		---		---		---		---		---		---		---		13	(1) ICPMS
Bi	ug/g	---		1.26	(2)	---		1.11 - 1.42		1.11	(1)	---		---		---		1.42	(1) AF
Br	ug/g	---		2.3	(2)	---		2.2 - 2.40		---		2.3	(2)	---		---		---	
Ca	%	1.11 ± 0.01		1.14 ± 0.06	(27)	1.12		1.05 - 1.27		1.12	(2)	1.12 ± 0.05	(10)	1.10 ± 0.07	(7)	1.18 ± 0.07	(7)	1.24	(2) TCFS
Ca	%	---		---		---		---		---		---		---		---		1.1	(1) ICPMS
Cd	ug/g	1.00 ± 0.15		1.12 ± 0.17	(9)	1.07		0.901 - 1.36		0.90	(1)	---		1.2	(1)	---		0.95	(1) IDMS
Cd	ug/g	---		---		---		---		---		---		---		---		1.32 ± 0.04	(3) AF
Cd	ug/g	---		---		---		---		---		---		---		---		1.04	(2) TCFS
Cd	ug/g	---		---		---		---		---		---		---		---		0.96	(1) ICPMS
Ce	ug/g	180		175 ± 7	(13)	174		163 - 186		---		175 ± 7	(13)	---		---		---	
Cl	ug/g	---		< 69		---		---		< 69		---		---		---		---	
Co	ug/g	46		43 ± 3	(21)	44		37 - 47		45.6	(2)	44 ± 2	(13)	35	(2)	38	(1)	44.9 ± 1.0	(3) COLOR
Cr	ug/g	196 ± 6		194 ± 7	(21)	192		185 - 210		196 ± 6	(3)	192 ± 4	(11)	193 ± 10	(5)	172	(2)	210	(1) ICPMS
Cs	ug/g	11		10.5 ± 0.7	(16)	10.5		9.3 - 11.8		---		10.5 ± 0.7	(16)	---		---		---	
Cu	ug/g	118 ± 3		120 ± 4	(11)	120		115 - 128		106	(2)	124	(1)	118 ± 2	(5)	115 ± 17	(3)	123	(1) ICPMS
Cu	ug/g	---		---		---		---		---		---		---		---		116.1	(1) IDMS
Dy	ug/g	---		15.6 ± 1.2	(8)	15		14.3 - 17.4		---		15.6 ± 1.2	(8)	---		---		---	
Eu	ug/g	4		3.7 ± 0.2	(13)	3.7		3.19 - 4.06		---		3.7 ± 0.2	(13)	---		---		---	
F	ug/g	---		94 ± 20	(4)	87		70 - 114		---		---		---		---		100	(2) CPAA
F	ug/g	---		---		---		---		---		---		---		---		107	(1) SSMS
Fe	%	9.40 ± 0.10		9.37 ± 0.23	(30)	9.38		8.83 - 9.70		9.08 ± 0.38	(3)	9.48 ± 0.15	(14)	9.35 ± 0.11	(6)	9.0 ± 0.4	(5)	9.16	(1) ICPMS
Fe	%	---		---		---		---		---		---		---		---		9.61	(2) TCFS
Ga	ug/g	58		56 ± 3	(9)	55.7		51 - 62.5		58	(1)	54 ± 5	(6)	---		57 ± 5	(3)	---	
Gd	ug/g	---		19 ± 4	(6)	17		15.3 - 25		---		25	(1)	---		---		18 ± 3	(5) TCFS
Ge	ug/g	---		33.9 ± 0.2	(5)	34		33.5 - 34		---		33.8	(1)	34	(3)	33.5	(1) COLOR		

TABLE 1633A-1: COMPILED DATA FOR NBS SRM 1633A TRACE ELEMENTS IN COAL FLY ASH (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS	
										Method	Mean ± SD
H2O-	%	---	0.35 (1)	---	---	---	---	---	---	---	0.35 (1) FD
Hf	ug/g	8	7.4 ± 0.3 (13)	7.31	6.6 - 7.80	---	7.4 ± 0.3 (13)	---	---	---	---
Hg	ng/g	160 ± 10	164 ± 24 (3)	151	150 - 192	(2)	---	2.9 (1)	---	192 (1) ICPMS	---
Ho	ug/g	---	2.9 (1)	---	---	---	---	---	---	---	---
I	ug/g	---	< 4.5	---	---	---	< 4.5	---	---	---	---
In	ng/g	---	158 ± 5 (4)	160	151 - 160	(1)	157 ± 5 (3)	---	---	---	---
K	%	1.88 ± 0.06	1.88 ± 0.05 (23)	1.86	1.77 - 1.99	1.91 ± 0.06 (3)	1.85 ± 0.04 (9)	1.89 ± 0.14 (5)	1.83 ± 0.03 (5)	1.96 (2) TGS	1.85 (1) ICPMS
K	%	---	---	---	---	---	---	---	---	---	---
K-40	pCi/g	---	13.9 (1)	---	---	---	---	---	---	13.9 (1) GAMMA	---
La	ug/g	---	84 ± 8 (15)	83.8	66 - 100	---	84 ± 8 (14)	93 (1)	---	---	---
Li	ug/g	---	165 ± 50 (4)	151	100 - 221	---	---	169 (2)	---	100 (1) OES	---
Li	ug/g	---	---	---	---	---	---	---	---	221 (1) CPAA	---
Lu	ug/g	---	1.12 ± 0.18 (8)	1.04	0.93 - 1.44	---	1.12 ± 0.18 (8)	---	---	---	---
Mg	ug/g	4550 ± 100	4570 ± 450 (14)	4600	3800 - 5700	4395 (2)	5500 ± 900 (3)	4680 ± 110 (6)	3800 (1)	4440 (1) ICPMS	4800 (1) CPAA
Mg	ug/g	---	---	---	---	---	---	---	---	190 (1) TGS	206 (1) ICPMS
Mn	ug/g	179 ± 8	188 ± 15 (21)	188	167 - 230	167 (1)	191 ± 25 (11)	191 ± 20 (6)	198 (2)	190 (1) TGS	190 (1) ICPMS
Mn	ug/g	---	---	---	---	---	---	---	---	206 (1) ICPMS	206 (1) CPAA
Mo	ug/g	29	30 ± 3 (8)	29.2	26 - 36	---	31 ± 4 (6)	32 (1)	28 (2)	29.2 (1) ICPMS	29.2 (1) CPAA
Na	ug/g	1700 ± 100	1730 ± 110 (22)	1750	1484 - 2020	1580 (2)	1750 ± 60 (12)	1700 ± 130 (5)	2200 (1)	1670 (1) ICPMS	1769 (1) CPAA
Na	ug/g	---	---	---	---	---	---	---	---	1769 (1) CPAA	---
Nb	ug/g	---	---	---	---	---	---	---	---	2100 (1) TGS	---
Nd	ug/g	---	28 (2)	24 - 31.5	---	---	---	---	28 (2)	---	---
Ni	ug/g	127 ± 4	74 ± 10 (5)	77.3	65.6 - 89	---	79 ± 9 (3)	---	---	65.8 (2) TGS	65.8 (2) VOLT
Ni	ug/g	---	124 ± 13 (16)	127	97 - 140	134 (1)	120 ± 18 (4)	130 ± 9 (4)	111 ± 17 (5)	124 (1) ICPMS	132 (1) COLOR
Ni	ug/g	---	---	---	---	---	---	---	---	133 (1) COLOR	133 (1) 14NAA
O	%	---	47.66 (1)	---	---	---	---	---	---	47.66 (1) 14NAA	47.66 (1) 14NAA
P	ug/g	---	1690 ± 240 (7)	1744	1320 - 2000	2000 (1)	1570 ± 240 (4)	1700 (1)	1840 (1) ICPMS	1840 (1) CPAA	1840 (1) NM
Pb	ug/g	72.4 ± 0.4	72 ± 4 (13)	72	64 - 75.9	72.4 (1)	68 ± 8 (4)	73 ± 4 (6)	72 (1) POT	72 (1) DMS	71.8 (1) ICPMS
Pb	ug/g	---	---	---	---	---	---	---	---	70.4 (1) ICPMS	70.4 (1) NM
Pb	ug/g	---	---	---	---	---	---	---	---	3.9 (1) GAMMA	3.9 (1) GAMMA
Pb-210	pCi/g	---	3.65 (2)	---	3.4 - 3.9	---	---	---	---	3.4 (1) RAS	3.4 (1) RAS
Pb-210	pCi/g	---	---	---	---	---	---	---	---	3.75 (1) RAS	3.75 (1) RAS
Po-210	pCi/g	---	3.75 (1)	---	---	---	---	---	---	---	---
Pr	ug/g	---	18.4 (2)	---	17.9 - 18.9	---	18.4 (2)	---	---	---	---
Ra-226	pCi/g	---	3.2 (1)	---	---	---	---	---	---	3.2 (1) GAMMA	3.2 (1) GAMMA
Rb	ug/g	131 ± 2	138 ± 11 (13)	136	121 - 163	---	142 ± 15 (9)	---	136 ± 10 (5)	---	---

TABLE 1633A-1: COMPILED DATA FOR NBS SRM 1633A TRACE ELEMENTS IN COAL FLY ASH (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS		MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS
			Mean ± SD	(n)							
S	ug/g	1800	1900 ± 700	(4)	1350	1200 - 2700	---	---	1200 (1)	2300 (1)	1350 (1) ICPMS
S	ug/g	---	---	---	---	---	---	---	---	---	2700 (1) TCGS
S-32/34 ratio	---	---	22.641	(1)	---	---	---	---	---	---	22.641 (1) IDMS
S-33/34 ratio	---	0.1781	(1)	---	---	---	---	---	---	0.1781 (1) IDMS	
Sb	ug/g	6.8 ± 0.4	6.9 ± 0.5	(14)	6.88	6.3 - 7.8	7.3 ± 1.4 (3)	7.0 ± 0.5 (11)	---	---	6.88 (1) ICPMS
Sb	ug/g	---	---	---	---	---	---	---	---	---	4.8 (1) AF
Sc	ug/g	40	39 ± 3	(14)	39	34 - 43	39.5 ± 1.9 (11)	40.3 (1)	34 (1)	34 (1)	---
Se	ug/g	10.3 ± 0.6	10.0 ± 1.7	(18)	10	6.2 - 13	10.4 ± 0.5 (3)	10.5 ± 1.5 (8)	10.5 (2)	7.8 ± 1.2 (4)	6.2 (1) AF
Se	ug/g	---	---	---	---	---	---	---	---	---	12 (1) ICPMS
Si	%	22.8 ± 0.8	23.0 ± 0.9	(15)	23	21 - 24.2	26.05 (2)	23.9 (1)	23.5 ± 0.4 (4)	22.4 ± 1.0 (6)	21.6 (2) TCGS
Si	%	---	---	---	---	---	---	---	---	---	22.16 (1) ICPMS
Sm	ug/g	---	17.0 ± 1.5	(16)	16.7	14.5 - 20	---	17.5 ± 1.9 (13)	---	---	16.3 ± 0.4 (4) TCGS
Sn	ug/g	---	10 ± 6	(5)	6.36	3.96 - 18.5	6.33 (2)	---	18.5 (1)	---	14.8 (1) AF
Sr	ug/g	830 ± 30	810 ± 40	(20)	815	740 - 890	---	805 ± 37 (12)	790 ± 50 (4)	840 ± 60 (5)	3.96 (1) ICPMS
Ta	ug/g	---	2.0 ± 0.2	(12)	1.94	1.71 - 2.30	---	2.0 ± 0.2 (12)	---	---	---
Tb	ug/g	---	2.5 ± 0.3	(9)	2.5	2.1 - 2.9	---	2.5 ± 0.3 (9)	---	---	---
Te	ug/g	---	< 3.5	---	---	---	---	< 3.5	---	---	---
Th	ug/g	24.7 ± 0.3	25.1 ± 1.4	(18)	24.8	22.4 - 28	---	25.0 ± 0.6 (14)	---	25 ± 6 (3)	23.2 (1) ICPMS
Th-232 pc/g	---	---	2.4	(1)	---	---	---	---	---	---	2.4 (1) GAMMA
Ti	ug/g	8000	8230 ± 390	(25)	8100	7400 - 9000	9000 (1)	8200 ± 400 (11)	7900 ± 600 (6)	7700 ± 800 (7)	8500 (2) TCGS
Ti	ug/g	---	---	---	---	---	---	---	---	8000 (1) ICPMS	
Tl	ug/g	5.7 ± 0.2	5.3 ± 0.8	(3)	5.7	4.4 - 5.7	---	5.7 (1)	---	4.4 (1)	5.7 (1) ICPMS
Tm	ug/g	---	2.4	(1)	---	---	---	2.4 (1)	---	---	---
U	ug/g	10.2 ± 0.1	10.3 ± 0.3	(21)	10.3	9.66 - 11	---	10.2 ± 0.3 (18)	---	11 (1)	10.2 (1) FLUOR
U	ug/g	---	---	---	---	---	---	---	---	---	3.6 (1) GAMMA
U-238 pc/g	---	3.6	(1)	---	---	---	---	---	---	---	324 (1) ICPMS
V	ug/g	297 ± 6	294 ± 18	(18)	290	271 - 344	---	289 ± 8 (9)	290 ± 13 (6)	263 (2)	360 (1) TCGS
V	ug/g	---	---	---	---	---	---	---	---	---	---
W	ug/g	---	5.7 ± 0.7	(7)	5.4	4.71 - 6.9	---	5.7 ± 0.7 (7)	---	85 ± 12 (4)	---
Y	ug/g	---	82 ± 6	(4)	82	74 - 89	---	89 (1)	85 ± 12 (4)	---	---
Yb	ug/g	---	7.4 ± 0.7	(8)	7.5	6.02 - 8.3	---	7.4 ± 0.7 (8)	---	---	---
Zn	ug/g	220 ± 10	226 ± 22	(22)	226	189 - 263	228 (2)	240 ± 17 (5)	226 ± 20 (6)	231 ± 23 (5)	192 ± 4 (3) AF
Zn	ug/g	---	---	---	---	---	---	---	---	230 (1) ICPMS	
Zr	ug/g	330 ± 80	(6)	300	220 - 410	---	370 ± 50 (4)	---	261 (2)	---	---

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ug/g)</u>						<u>As (ug/g) cont.</u>				
<	0.3		ITNA	85GAU 04		145		11	FAA	83XIA 01
<	0.6	L	IENA	80GLA 03		145			HAA	84YAM 01
<	1.1	L	ITNA	82SUZ 02		145	6		ITNA	82SUZ 02
						145	8		CPXRF	84AHL 01
						145	8	35	VV	81GLA 04
<u>Al (%)</u>						145	11		IENA	82GLA 02
13	0.41		ICPES	84NAD 01		145	15		ITNA	84SIL 01
13.8	0.2		ICPMS	86SCI 02		145.3	8.1		ITNA	83OBR 01
13.8	0.32		ITNA	83OBR 01		146	2		ITNA	85VOG 01
13.93	0.32		IENA	85GLA 02		147			HAA	84TER 04
14	0.2		TCGS	79FAI 01		147	15		ITNA	85FIL 01
14	0.2	D	TCGS	80AND 01		148	3	35	IENA	80GLA 03
14	0.3		ITNA	85VOG 01		148	5		ICPMS	86SCI 02
14.1	0.2		ICPES	84BOT 01		149	3		ITNA	85SUN 01
14.1	0.8		ITNA	85SUN 01		150		11	HAA	82CRO 03
14.2	0.3		ITNA	80GAR 01		151		6	EXRF	84JEN 01
14.2	0.3	35	ITNA	81GLA 02		152		6	EXRF	84JEN 01
14.2	0.4	35	ITNA	81GLA 04		153		11	FAA	83XIA 01
14.2	0.5	11	ICPES	85SAT 01		157	11	13	ICPES	84BOT 01
14.3	0.1		TCGS	85VOG 01						
14.4	0.1		ICPES	85HAR 01		<u>B (ug/g)</u>				
14.4	0.2	11	ICPES	85SAT 01		37.9	1.7		TCGS	85VOG 01
14.5	0.12		AA	82NAD 02		39	1		ICPES	82OWE 01
14.7	0.7		ITNA	82SUZ 02		39	3	35	TCGS	81GLA 04
14.73	0.3	16	EXRF	82PEL 01		59.2	0.7	D	TCGS	80AND 01
14.76	0.3	16	EXRF	82PEL 01		39.2	0.7		TCGS	79FAI 01
14.81	0.2		ICPES	82NAD 02		41			TCGS	84HIG 01
14.9707	0.0529		ICPES	85PEA 01		42	4		TCGS	84GLA 01
15			CPAA	83BIR 01		44			OES	83MIL 01
15	0.43		CPXRF	80KIR 01						
15.3	1.1		CPXRF	84AHL 01		<u>Ba (ug/g)</u>				
15.4	0.2	16	EXRF	82PEL 01		1060			ITNA	82GLA 02
16.5	1.5		ITNA	85FIL 01		1100	100	9	ITNA	82SUZ 02
17.4	6		EXRF	84JEN 01		1210	50	9	ITNA	82SUZ 02
17.5	6		EXRF	84JEN 01		1240	200	5	IENA	80GLA 03
						1300	90		ITNA	84SUZ 02
<u>As (ug/g)</u>						1300				
52.3			ICPES	85NAR 02		1300	100		CPXRF	84AHL 01
66			AF	85NAR 02		1333	100	17	ITNA	84KYL 01
96	13		ICPES	84NAD 01		1339	177		ITNA	85SUN 01
97	18		CPXRF	80KIR 01		1400	20	5	IENA	80GLA 03
135	11		HAA	82CRO 03		1400	100		ICPES	84NAD 01
135	5		HAA	85YAM 01		1400	360		ITNA	85FIL 01
138.4	8.8		POL	83ELK 01		1430	25	11	ICPES	85SAT 01
140	1		ICPES	84LIV 01		1440	36		ITNA	83OBR 01
141	8		AE-AF	82MAT 01		1450	110	35	NAA	81GLA 04
142			ITNA	81SLO 01		1471	70	17	ITNA	84KYL 01
143			RTNA	81SLO 01		1480	30		ICPES	85HAR 01
143	8		FAA	84SIL 01		1490	80		ITNA	84GLA 02
144	12	13	ICPES	84BOT 01		1500	90		ITNA	80GAR 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ba (ug/g) cont.</u>					<u>Ca (%) cont.</u>					
1500	100		ITNA	85VOG 01		1.11	0.076		ITNA	830BR 01
1500	100		CPXRF	80KIR 01		1.12	0.01	11	ICPES	85SAT 01
1500	200	35	ITNA	81GLA 02		1.12	0.01	11	ICPES	85SAT 01
1520	20	5	IENA	80GLA 03		1.12	0.07		ITNA	85VOG 01
1540	30		ICPES	84BOT 01		1.12	0.08		ITNA	80GAR 01
1600			ICPES	82NAD 02		1.13	0.02	16	EXRF	82PEL 01
1760	300	5	IENA	80GLA 03		1.13	0.12		ITNA	85SUN 01
2350		6	EXRF	84JEN 01		1.14	0.02	16	EXRF	82PEL 01
2370		6	EXRF	84JEN 01		1.14	0.02	16	EXRF	82PEL 01
						1.14	0.04		AA	82GLA 02
<u>Be (ug/g)</u>						1.16	0.21		ITNA	82SUZ 02
12			OES	83MIL 01		1.2	0.2		TCGS	85VOG 01
12.16		6	ICPES	85POU 01		1.2155			ICPES	85PEA 01
12.2	0.3	11	ICPES	85SAT 01		1.23	0.16		ITNA	85FIL 01
12.36		6	ICPES	85POU 01		1.27		6	EXRF	84JEN 01
12.5	0.8		FAA	85POU 01		1.27		6	EXRF	84JEN 01
13	0.2		ICPES	84BOT 01		1.29			ITNA	85GAU 04
13	2		ICPMS	86SCI 02		1.29			TCGS	80AND 01
13.3	0.5	11	ICPES	85SAT 01		1.29	0.11	D	TCGS	79FAI 01
13.4		6	ICPES	85POU 01						
13.5	0.8	6	ICPES	85POU 01						
13.6		D	AA	83TER 01						
13.6			AA	82TER 02		0.901			AA	84TER 01
						0.95	0.05		IDMS	84BRO 03
<u>Bi (ug/g)</u>						0.96	0.06		ICPMS	86SCI 02
1.11		D	FAA	84TER 03		1.01	0.13		TCGS	85VOG 01
1.11			HAA	84TER 02		1.07	0.05	D	TCGS	80AND 01
1.42			AF	85MAR 02		1.07	0.05		TCGS	79FAI 01
						1.2	0.6	13	ICPES	84BOT 01
						1.28		6	AF	84MAR 02
<u>Br (ug/g)</u>						1.31			AF	85MAR 02
<	4.4		ITNA	84SUZ 02		1.36		6	AF	84MAR 02
<	10	L	IENA	80GLA 03		3.1			ICPES	85MAR 02
2.2	0.3		ITNA	82SUZ 02		7.4	3.3	13	ICPES	84BOT 01
2.4	0.1	5	IENA	80GLA 03						
<u>Ce (ug/g)</u>						163	6		ITNA	82GLA 02
0.025	0.002		AA	82HAR 01		167	8	12	ITNA	82SUZ 02
0.99	0.09		ICPES	84NAD 01		170	6		ITNA	84SUZ 02
1.05	0.16	35	ITNA	81GLA 02		170	6	35	ITNA	81GLA 02
1.08	0.02		ICPES	84BOT 01		172.1	1	17	ITNA	84KYL 01
1.08	0.06		CPXRF	84AHL 01		173.1	3.2	17	ITNA	84KYL 01
1.09	0.01		AA	82NAD 02		174	5	12	ITNA	82SUZ 02
1.09	0.02		ICPES	85HAR 01		175	4		ITNA	85SUN 01
1.1	0.08		ICPMS	86SCI 02		180	5	35	NAA	81GLA 04
1.1	0.1	35	ITNA	81GLA 04		180	20		ITNA	85FIL 01
1.1	0.3	35	IENA	80GLA 03		183	19		ITNA	80GAR 01
1.11	0.03		ICPES	82NAD 02		185	5		ITNA	85VOG 01
						186	4	35	IENA	80GLA 03
						230	45		CPXRF	80KIR 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cl (ug/g)</u>						<u>Cs (ug/g)</u>				
<	69	L	ITNA	82SUZ	02		9.3	0.5	ITNA	82GLA 02
<u>Co (ug/g)</u>							9.6	0.6	17	ITNA 84KYL 01
33	2		ICPES	85HAR	01		9.7	0.6	35	ITNA 81GLA 02
37	1		ICPES	84BOT	01		9.9	0.6		ITNA 84GLA 11
37	3	35	IENA	80GLA	03		9.9	0.9		ITNA 84GLA 02
38	13		CPXRF	80KIR	01		10.1	0.2	35	IENA 80GLA 03
39	2		ITNA	85FIL	01		10.2	0.2		ITNA 82SUZ 02
40			ITNA	82GLA	02		10.5	0.3	35	NAA 81GLA 04
42.8	0.8	17	ITNA	84KYL	01		10.6	1.1		ITNA 80GAR 01
43.3	1	17	ITNA	84KYL	01		10.7	0.6	17	ITNA 84KYL 01
43.5	1.6		ITNA	84GLA	11		10.8	0.3		ITNA 86GAU 01
43.9	0.55		COLOR	85KAT	01		11	1.1		ITNA 85FIL 01
44	1	35	ITNA	81GLA	02		11.1	1.2		ITNA 85GAU 04
44	1		ITNA	82SUZ	02		11.2	0.5		ITNA 85VOG 01
44.2	1.55		AA	85KAT	01		11.3	0.5		ITNA 85SUN 01
44.8	0.8		ITNA	84GLA	02		11.8	3.2		ITNA 84SUZ 02
44.8	1	12	COLOR	83KAT	02	<u>Cu (ug/g)</u>				
45	2		ITNA	84SUZ	02		96	7		CPXRF 84AHL 01
45.9	0.7		ITNA	85VOG	01		96.6	10.7		AA 84KAN 01
46	1.36	12	COLOR	83KAT	02		115	1	11	ICPES 85SAT 01
46	1.5		ITNA	85SUN	01		116	4		AA 82HAR 01
46.2	1.8		ITNA	80GAR	01		116	7		ICPES 84NAD 01
47	4	35	NAA	81GLA	04		116.1	0.8		IDMS 84BRO 03
47	11		AA	82HAR	01		120		11	ICPES 85SAT 01
<u>Cr (ug/g)</u>							120	2		ICPES 85HAR 01
129	2		ICPES	84NAD	01		120	4		ICPES 84BOT 01
145	44		CPXRF	84AHL	01		120	5.2		CPXRF 80KIR 01
185	7	12	ITNA	82SUZ	02		123	4		ICPMS 86SCI 02
186	6		ICPES	85HAR	01		124	33		ITNA 84SUZ 02
186	8	35	ITNA	81GLA	02		128	4		WXRF 84KYL 01
187	8		ICPES	84BOT	01		186		6	EXRF 84JEN 01
189	3	11	ICPES	85SAT	01		188		6	EXRF 84JEN 01
190	1.5	11	AA	84KAM	01	<u>Dy (ug/g)</u>				
190	6		ITNA	85SUN	01		14.3	0.2	35	ITNA 81GLA 02
190	8		ITNA	85FIL	01		14.5		35	ITNA 81GLA 04
191	13		ITNA	82GLA	02		15	0.9		ITNA 85SUN 01
192			ICPES	81WAL	01		15	3.3		ITNA 83OBR 01
193	14		ITNA	84SUZ	02		16.6	1.3		ITNA 80GAR 01
194	6	12	ITNA	82SUZ	02		16.8	0.3		ITNA 82SUZ 02
195	7		ITNA	84GLA	02		17.4	0.5		ITNA 84SUZ 02
196	8	11	AA	84KAM	01					
197	13		ITNA	80GAR	01					
197	18	35	ITNA	81GLA	04					
198	1		ITNA	85VOG	01					
200	11		CPXRF	80KIR	01					
202	16		AA	82HAR	01					
210		11	ICPES	85SAT	01					
210	8		ICPMS	86SCI	02					
482		6	EXRF	84JEN	01					
486		6	EXRF	84JEN	01					

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Eu (ug/g)</u>										
2	2	35	IENA	80GLA 03		9.51	0.61	AA	82HAR 01	
2.98	0.33		ITNA	80GAR 01		9.52	0.34	TCGS	85VOG 01	
3.19	0.08	35	ITNA	81GLA 02		9.53	0.08	11	ICPES	85SAT 01
3.6	0.1		ITNA	84GLA 02		9.58	0.22	ITNA	85SUN 01	
3.62	0.04	17	ITNA	84KYL 01		9.62	0.1	ITNA	85GAU 04	
3.64	0.25		ITNA	83OBR 01		9.7	0.2	5	IENA	80GLA 03
3.7	0.2	35	ITNA	81GLA 04		9.7	0.2	D	TCGS	80AND 01
3.7	0.2		ITNA	82GLA 02		9.7	0.2		TCGS	79FAI 01
3.7	0.3		ITNA	82SUZ 02		9.7	0.3		ITNA	84SUZ 02
3.7	0.6		ITNA	85FIL 01						
3.72	0.08	17	ITNA	84KYL 01						
3.9	0.3		ITNA	84SUZ 02						
4	0.2		ITNA	85VOG 01		33		6	EXRF	84JEN 01
4.06	0.14		ITNA	85SUN 01		34		6	EXRF	84JEN 01
<u>F (ug/g)</u>										
23	2		ISE	83BET 02		45		5	ITNA	85FIL 01
70			UU	85RIC 01		51		5	ITNA	82SUZ 02
87			CPAA	83BIR 01		54			CPXRF	84AHL 01
107			SSMS	85CLA 02		55			CPXRF	80KIR 01
114	13		CPAA	85CLA 02		55.7		4.5	ITNA	83OBR 01
						56		35	IENA	81GLA 04
						57.5			FAA	85XIA 01
						59	1	35	IENA	80GLA 03
						62.5	1		WXRF	84KYL 01
<u>Fe (%)</u>										
6.7	0.3		CPXRF	84AHL 01						
8.4	0.1		ITNA	85FIL 01		15.3	0.2		TCGS	79FAI 01
8.54	6		EXRF	84JEN 01		16.3	0.8		TCGS	85VOG 01
8.6	6		EXRF	84JEN 01		17	2	4	TCGS	85GLA 05
8.83	0.43		ICPES	84NAD 01		18	2	4	TCGS	85GLA 05
8.84			AA	82GLA 02		23.5	0.3		TCGS	80AND 01
8.88	0.07		AA	82NAD 02		25	2		ITNA	84SUZ 02
9.16	0.01		ICPMS	86SCI 02						
9.21	0.1		ICPES	82NAD 02						
9.23	0.09	35	ITNA	81GLA 02						
9.24	0.13	17	ITNA	84KYL 01		33.5	0.7		COLOR	84SHI 01
9.26	0.02	16	EXRF	82PEL 01		33.8	3.4		ICPES	84NAD 02
9.2967	0.2097		ICPES	85PEA 01		34		6	EXRF	84JEN 01
9.3	0.02	16	EXRF	82PEL 01		34		6	EXRF	84JEN 01
9.3	0.1		ICPES	85HAR 01		34	2		CPXRF	84AHL 01
9.36	0.02	11	ICPES	85SAT 01						
9.36	0.49	35	NAA	81GLA 04						
9.38	0.07		ICPES	84BOT 01						
9.4	0.1	5	IENA	80GLA 03		0.35			FD	80KHA 02
9.4	0.3	12	ITNA	82SUZ 02						
9.43	0.17	17	ITNA	84KYL 01						
9.48	0.02	16	EXRF	82PEL 01						
9.49	0.1		ITNA	84GLA 02						
9.5	0.15		ITNA	85VOG 01						
9.5	0.3		ITNA	80GAR 01						
9.5	0.3	12	ITNA	82SUZ 02						

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>Hf (ug/g)</u>					<u>K (%) cont.</u>						
6.3	0.7	9	ITNA	82SUZ 02		1.88	0.04		ICPES	82NAD 02	
6.6			ITNA	82GLA 02		1.88	0.1	35	ITNA	81GLA 04	
7	0.2	17	ITNA	84KYL 01		1.89	0.02	16	EXRF	82PEL 01	
7	0.6		ITNA	85FIL 01		1.9	0.02	16	EXRF	82PEL 01	
7.2	0.3	35	ITNA	81GLA 02		1.909	0.083		ICPES	85PEA 01	
7.2	0.8	9	ITNA	82SUZ 02		1.92	0.04		ITNA	85VOG 01	
7.31	0.37		ITNA	85SUN 01		1.93	0.03		AA	82NAD 02	
7.4	0.4		ITNA	84GLA 02		1.94	0.11		TCGS	85VOG 01	
7.5	0.4	17	ITNA	84KYL 01		1.96	0.02		AA	82GLA 02	
7.6	0.2	35	NAA	81GLA 04		1.97	0.04		TCGS	79FAI 01	
7.6	0.2		ITNA	85VOG 01		1.97	0.04	D	TCGS	80AND 01	
7.6	0.3		ITNA	84SUZ 02		1.99	0.03	35	IENA	80GLA 03	
7.78	0.85		ITNA	80GAR 01		2.09	0.08		ICPES	85HAR 01	
7.8	0.2	35	IENA	80GLA 03		2.29		6	EXRF	84JEN 01	
						2.31		6	EXRF	84JEN 01	
<u>Hg (ng/g)</u>					<u>K-40 (pCi/g)</u>						
150	10		CVAA	82GLA 02		13.9	0.4		GAMMA	84ROS 03	
151	12		CVAA	82DOO 01							
192	8		ICPMS	86SCI 02							
<u>Ho (ug/g)</u>					<u>La (ug/g)</u>						
2.9	0.4		ITNA	84SUZ 02		62	2		ITNA	82SUZ 02	
						66	2		ITNA	84SUZ 02	
						79			ITNA	84GLA 02	
<u>I (ug/g)</u>						79.4	1.3	17	ITNA	84KYL 01	
<	4.5		ITNA	84SUZ 02		79.9	0.4	17	ITNA	84KYL 01	
<	5	L	ITNA	82SUZ 02		81	1		ITNA	82GLA 02	
						83	4	35	ITNA	81GLA 04	
						83.8	1		ITNA	85SUN 01	
<u>In (ng/g)</u>						84	2		ITNA	82GRA 01	
						84	6	35	IENA	80GLA 03	
151	16		ITNA	82SUZ 02		87.9	7		ITNA	830BR 01	
160	10		FAA	85XIA 02		89	5		ITNA	85FIL 01	
160	30		ITNA	830BR 01		90.2	0.9		ITNA	85VOG 01	
<u>K (%)</u>						93	2		ICPES	85HAR 01	
						100	23		ITNA	80GAR 01	
1.7	0.06		ICPES	84NAD 01		<u>Li (ug/g)</u>					
1.71	0.09		CPXRF	84AHL 01							
1.77	0.23		ITNA	85FIL 01		100			OES	83MIL 01	
1.8	0.07		CPXRF	80KIR 01		151	15		ICPES	84BOT 01	
1.82			ITNA	84GLA 02		187	6		ICPES	84NAD 01	
1.84	0.14		ITNA	80GAR 01		221			CPAA	83BIR 01	
1.85	0.02		ICPMS	86SCI 02							
1.85	0.02		AA	82HAR 01							
1.85	0.05		ITNA	85SUN 01							
1.86	0.06		ICPES	84BOT 01							
1.86	0.089		ITNA	830BR 01							
1.86	0.12		ITNA	82SUZ 02							
1.87	0.02	16	EXRF	82PEL 01							

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Lu (ug/g)</u>						<u>Mn (ug/g) cont.</u>				
0.93	0.09		ITNA	80GAR 01		230			ICPES	82NAD 02
0.97	0.25		ITNA	82GLA 02		260	20	35	IENA	80GLA 03
0.99	0.02	17	ITNA	84KYL 01		277	7		ITNA	84GLA 02
1.04	0.07		ITNA	85SUN 01		1000		6	EXRF	84JEN 01
1.06	0.13		ITNA	84GLA 11		1010		6	EXRF	84JEN 01
1.17	0.03	17	ITNA	84KYL 01						
1.33	0.1		ITNA	84SUZ 02						
1.44	0.12		ITNA	82SUZ 02						
<u>Mg (ug/g)</u>						26	3		CPXRF	84AHL 01
1400	200		AA	82HAR 01		27	6		ITNA	82SUZ 02
3800	700		CPXRF	80KIR 01		28.8	2.3		RTNA	84MOK 02
3900	200		ICPES	84NAD 01		29.2	0.6		ICPMS	86SCI 02
4200			AA	82GLA 02		30	4.2		CPXRF	80KIR 01
4440	40		ICPMS	86SCI 02		31.3	3.6		ITNA	85VOG 01
4500	500		ITNA	80GAR 01		32	2		ICPES	84BOT 01
4520	80		ICPES	84BOT 01		36	1	35	IENA	80GLA 03
4590	30		AA	82NAD 02						
4600	70		ICPES	82NAD 02		1484			ICPES	85PEA 01
4660	50		ICPES	85HAR 01		1560	70		AA	82NAD 02
4710	80	11	ICPES	85SAT 01		1600	100		AA	82HAR 01
4760	200	11	ICPES	85SAT 01		1670	20		ICPMS	86SCI 02
4800			CPAA	83BIR 01		1680	90		ITNA	83OBR 01
4824			ICPES	85PEA 01		1700	70		ICPES	82NAD 02
5700			ITNA	85GAU 04		1720	50		ITNA	80GAR 01
6200	500		IENA	85GLA 02		1730	10		ITNA	84GLA 02
8000	1300		ITNA	82SUZ 02		1740	70		ITNA	85VOG 01
						1740	100	35	ITNA	81GLA 04
<u>Mn (ug/g)</u>						1750	50		ITNA	82SUZ 02
167	7		ITNA	85FIL 01		1760			ITNA	82GLA 02
167	9		AA	82HAR 01		1760	60		ICPES	85HAR 01
170	24		ITNA	82SUZ 02		1769			ICPES	84BOT 01
173	5		ICPES	85HAR 01		1770	50		CPAA	83BIR 01
180		11	ICPES	85SAT 01		1770	80		ITNA	85SUN 01
181	9		ITNA	85SUN 01		1800	100		ITNA	85GAU 04
182			ITNA	85GAU 04		1800	100	35	ICPES	84NAD 01
182	3	35	ITNA	81GLA 02		1800	70	17	ITNA	81GLA 02
184	7		ICPES	84NAD 01		1900			ITNA	84KYL 01
185	11		ITNA	83OBR 01		2020	400		ITNA	82SCH 05
188	1	11	ICPES	85SAT 01		2100	600		TCGS	79FAI 01
189	2		ITNA	85VOG 01		2100	600	D	TCGS	80AND 01
189	5		ICPES	84BOT 01		2200	600		CPXRF	80KIR 01
190	15	D	TCGS	80AND 01						
190	15		TCGS	79FAI 01						
191	4		ITNA	80GAR 01		24	3		CPXRF	84AHL 01
195	15		CPXRF	80KIR 01		31.5	2		WXRF	84KYL 01
200	56		CPXRF	84AHL 01						
206	7		ICPMS	86SCI 02						
210	50	35	ITNA	81GLA 04						

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Nd (ug/g)</u>										
65.6	5.4		TCGS	79FAI 01		72		6	EXRF	84JEN 01
66	5		TCGS	80AND 01		72	3		POT	84PIN 01
71	3	35	IENA	80GLA 03		72.4			AA	84TER 01
77.3	8.9		ITNA	85SUN 01		73		6	EXRF	84JEN 01
89	5		ITNA	84SUZ 02		74	4	13	ICPES	84BOT 01
113	7	12	ITNA	82SUZ 02		75	5		CPXRF	84AHL 01
122	13	12	ITNA	82SUZ 02		75.1	1		WXRF	84KYL 01
						75.8			EXRF	84PIN 01
						75.9			ICPES	85NAR 02
<u>Ni (ug/g)</u>										
92	8		CPXRF	84AHL 01		<u>Pb-210 (pCi/g)</u>				
97	36		ITNA	85FIL 01		3.4	0.6		GAMMA	84ROS 03
105		6	EXRF	84JEN 01		3.9	0.6		NM	84ROS 03
106		6	EXRF	84JEN 01		<u>Po-210 (pCi/g)</u>				
112	4.8		CPXRF	80KIR 01		3.75	0.15		RAS	84ROS 03
117	6	35	IENA	80GLA 03		<u>Pr (ug/g)</u>				
119	2		ICPES	84BOT 01		17.9	1.7	12	ITNA	82SUZ 02
124			VOLT	84BRA 01		18.9	1.1	12	ITNA	82SUZ 02
127	5		ICPES	85HAR 01		<u>Ra-226 (pCi/g)</u>				
128	6	12	ITNA	82SUZ 02		3.2	0.2		GAMMA	84ROS 03
132	4		ICPMS	86SCI 02		<u>Rb (ug/g)</u>				
133	2.1		COLOR	84KAT 01		121	7		CPXRF	84AHL 01
133	4	11	ICPES	85SAT 01		124	4	12	ITNA	82SUZ 02
134	0.6		AA	84KAT 01		130	26		ITNA	80GAR 01
138	2		WXRF	84KYL 01		134	8		ITNA	84GLA 02
139	7	12	ITNA	82SUZ 02		134	16	35	NAA	81GLA 04
140		11	ICPES	85SAT 01		135		6	EXRF	84JEN 01
<u>O (%)</u>										
47.66	0.36	34	14NAA	80KHA 02		136		6	EXRF	84JEN 01
<u>P (ug/g)</u>										
760	10		ICPES	85HAR 01		138	8	12	ITNA	82SUZ 02
1320	30		ICPES	84BOT 01		140	8		ITNA	80GAR 01
1400	40		ICPES	84NAD 01		140.7	2		ITNA	84JEN 01
1700			XRF	81TUR 01		147	8	35	ITNA	82SUZ 02
1744			ICPES	85PEA 01		150	12		CPXRF	80KIR 01
1800	300		ICPES	82NAD 02		163	2	35	IENA	80GLA 03
1840	120		ICPMS	86SCI 02		170	31		ITNA	85FIL 01
2000			AA	82NAD 02		<u>S (ug/g)</u>				
<u>Pb (ug/g)</u>										
51	12	13	ICPES	84BOT 01		1200			ICPES	85PEA 01
60	10		ICPES	85HAR 01		1350	90		ICPMS	86SCI 02
64	13		ICPES	84NAD 01		2300	200		CPXRF	84AHL 01
65	5.7		CPXRF	80KIR 01		2700	200	D	TCGS	80AND 01
70.4	1.2		ICPMS	86SCI 02		2700	200		TCGS	79FAI 01
71.8	0.6		IDMS	83BRO 01						

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>S-32/34 (ratio)</u>						<u>Se (ug/g) cont.</u>				
22.641			IDMS	84KEL 01		9.4	0.3	35	RTNA	81GLA 01
<u>S-33/34 (ratio)</u>						9.4	0.5		RTNA	81SLO 01
0.1781			IDMS	84KEL 01		9.5	1.2		CPXRF	84AHL 01
<u>Sb (ug/g)</u>						9.8	0.5		HAA	85YAM 01
4.2	11	HAA	82CRO 03			10	2	35	IENA	80GLA 03
4.8		AF	85NAR 02			10.2	0.6	9	ITNA	82SUZ 02
6.3	0.2	ITNA	82SUZ 02			10.4	5.4		ICPES	84BOT 01
6.3	0.5	17	ITNA	84KYL 01		10.6			ICPES	85NAR 02
6.4	0.4	17	ITNA	84KYL 01		10.62	0.09		HAA	85CHA 01
6.5	11	HAA	82CRO 03			10.7	0.8	35	NAA	81GLA 04
6.5	0.4	HAA	85YAM 01			10.8	0.3	D	HAA	84IMA 03
6.6		ITNA	82GLA 02			10.8	0.3	7	HAA	84IMA 01
6.88	0.28		ICPMS	86SCI 02		12	5		ICPMS	86SCI 02
6.9	0.3	ITNA	85VOG 01			12.7	1.3		ITNA	84SUZ 02
6.9	0.7	ITNA	85FIL 01			13	3		ITNA	85FIL 01
6.95	0.22	35	ITNA	81GLA 02		Si (%)				
7.3	0.2	RTNA	81SLO 01			18	0.93		CPXRF	80KIR 01
7.49	0.39	ITNA	85SUN 01			18.5	1.1		ICPES	84NAD 01
7.7	0.5	35	IENA	80GLA 03		20.4	1.1		CPXRF	84AHL 01
7.8	1.5	ITNA	80GAR 01			21	2		TCGS	85VOG 01
8.96		HAA	84TER 04			22.16	0.29		ICPMS	86SCI 02
10.1	3.1	13	ICPES	84BOT 01		22.2	0.4	D	TCGS	79FAI 01
<u>Sc (ug/g)</u>						22.2	0.4	6	EXRF	80AND 01
34	1	ITNA	82SUZ 02			22.4		6	EXRF	84JEN 01
34	4.2	CPXRF	80KIR 01			22.5		6	EXRF	84JEN 01
36		ITNA	82GLA 02			22.9764	0.0934		ICPES	85PEA 01
37	2	ITNA	85FIL 01			23	0.2	16	EXRF	82PEL 01
38.8	0.7	17	ITNA	84KYL 01		23.13	0.2	16	EXRF	82PEL 01
38.9	0.6	ITNA	85SUN 01			23.16	0.2	16	EXRF	82PEL 01
39	2	ITNA	84GLA 02			23.37	0.23		ICPES	82NAD 02
39.8	0.8	17	ITNA	84KYL 01		23.5	0.2	11	ICPES	85SAT 01
40	1	35	ITNA	81GLA 02		23.9	0.5		AA	82GLA 02
40.3	0.8		ICPES	85HAR 01		23.9	0.5	35	IENA	80GLA 03
40.3	0.8	ITNA	85VOG 01			24	0.3	11	ICPES	85SAT 01
40.6	1.3		ITNA	80GAR 01		24.2	0.8		AA	82NAD 02
41	2	35	ITNA	81GLA 04		Sm (ug/g)				
43	1	35	IENA	80GLA 03		14.5	1.3	35	ITNA	81GLA 04
<u>Se (ug/g)</u>						15	1		ITNA	85FIL 01
6.2		AF	85NAR 02			16	0.2		TCGS	79FAI 01
7	6	EXRF	84JEN 01			16	0.2	D	TCGS	80AND 01
7	6	EXRF	84JEN 01			16.1	1.5	4	TCGS	85GLA 05
7.8	2.1	CPXRF	80KIR 01			16.2	1.5	4	TCGS	85GLA 05
8.8	0.4	9	ITNA	82SUZ 02		16.3	0.5		ITNA	85SUN 01
						16.4	0.1		ITNA	82GLA 02
						16.6	0.3		ITNA	85VOG 01
						16.7			ITNA	84GLA 02
						16.9	0.5		TCGS	85VOG 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Sm (ug/g) cont.</u>						<u>Tb (ug/g)</u>				
17	0.3	17	ITNA	84KYL 01		2.1	0.1		ITNA	82SUZ 02
17.1	0.2	17	ITNA	84KYL 01		2.1	0.2		ITNA	84GLA 02
18.8	0.6		ITNA	830BR 01		2.2	0.1		ITNA	84SUZ 02
19.4	0.7		ITNA	82SUZ 02		2.3	0.7		ITNA	80GAR 01
20	4.4		ITNA	80GAR 01		2.5	0.1	17	ITNA	84KYL 01
21	1		ITNA	84SUZ 02		2.6	0.1	17	ITNA	84KYL 01
						2.75	0.18		ITNA	85SUN 01
<u>Sn (ug/g)</u>						2.8	0.5	35	NAA	81GLA 04
						2.9	0.1	35	IENA	80GLA 03
3.96	0.12		ICPMs	86SCI 02		4.7	1.7		ITNA	85FIL 01
6.3	0.2		FAA	84LON 01						
6.36	0.15		FAA	85TER 01		<u>Te (ug/g)</u>				
14.8			AF	85NAR 02		<	3.5		ITNA	84SUZ 02
18.5			ICPES	85NAR 02		<	6.6	L	ITNA	82SUZ 02
<u>Sr (ug/g)</u>						<u>Th (ug/g)</u>				
717	26		ICPES	84NAD 01		11		6	EXRF	84JEN 01
740	20	5	IENA	80GLA 03		11		6	EXRF	84JEN 01
742	23		ITNA	85SUN 01		18	3		CPXRF	84AHL 01
750	40		CPXRF	84AHL 01		22.4			ITNA	82GLA 02
770	35		IENA	81GLA 04		23.2	0.8		ICPMS	86SCI 02
790	30		ICPES	84BOT 01		24	2		ITNA	85FIL 01
790	79		ITNA	85FIL 01		24.3	3.8	12	ITNA	82SUZ 02
813	70		ITNA	830BR 01		24.6	0.9	35	NAA	81GLA 04
815	7		IENA	84GLA 02		24.6	1.1	35	ITNA	81GLA 02
815	10	11	ICPES	85SAT 01		24.7	1.2		ITNA	85VOG 01
819	54		ITNA	80GAR 01		24.7	1.4	17	ITNA	84KYL 01
825	40		CPXRF	80KIR 01		24.8	0.5		ITNA	84GLA 02
829	22		IENA	84GLA 11		24.8	1.6		ITNA	80GAR 01
834.5	2		WXRF	84KYL 01		25	0.7		ITNA	84SUZ 02
840	10		ICPES	85HAR 01		25	1	35	IENA	80GLA 03
840	30	5	IENA	80GLA 03		25.6	1	17	ITNA	84KYL 01
840	40	12	ITNA	82SUZ 02		25.6	2.8		ITNA	86GAU 01
850	70	12	ITNA	82SUZ 02		26	0.4		ITNA	85SUN 01
882	6		EXRF	84JEN 01		26	1.3	12	ITNA	82SUZ 02
890	6		EXRF	84JEN 01		27.9	1		WXRF	84KYL 01
						28	8.3		CPXRF	80KIR 01
<u>Ta (ug/g)</u>						<u>Th-232 (pCi/g)</u>				
1.71	0.05		ITNA	82SUZ 02		2.4	0.2		GAMMA	84ROS 03
1.8	0.07		ITNA	84SUZ 02						
1.8	0.1		ITNA	84GLA 02						
1.8	0.12	35	ITNA	81GLA 02						
1.8	0.2	35	NAA	81GLA 04						
1.94			ITNA	82GLA 02						
2.0	0.1	17	ITNA	84KYL 01						
2.0	0.5		ITNA	80GAR 01						
2.1	0.2	35	IENA	80GLA 03						
2.11	0.16		ITNA	85SUN 01						
2.3	0.1	17	ITNA	84KYL 01						
2.3	0.2		ITNA	85FIL 01						

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ti (ug/g)</u>					<u>U (ug/g) cont.</u>				
6660		6	EXRF	84JEN 01	10.3	0.4		ITNA	82SUZ 02
6700	200		ICPES	84NAD 01	10.3	0.4		DNA	84GLA 11
6710		6	EXRF	84JEN 01	10.4	0.1		DNA	85GLA 04
7400	200	16	EXRF	82PEL 01	10.4	0.3	17	DNA	82CON 01
7700	300		ICPES	84BOT 01	10.4	0.5		ITNA	85VOG 01
7800	300		ITNA	82SUZ 02	10.4	0.8		DNA	84GLA 02
7880	540		ITNA	83OBR 01	10.47	0.09	35	DNA	80GLA 01
7940	90	11	ICPES	85SAT 01	10.47	0.15		DNA	86GAU 01
8000	40		ICPMS	86SCI 02	10.6	0.4	35	NAA	81GLA 04
8000	600	35	NAA	81GLA 04	10.7	0.3	17	DNA	82CON 01
8000	800		CPXRF	80KIR 01	11	2.7		CPXRF	80KIR 01
8060	370		ITNA	80GAR 01					
8100	100		ICPES	85HAR 01					
8200	700	35	ITNA	81GLA 02					
8300			ITNA	84GLA 02	3.6	0.3		GAMMA	84ROS 03
8300	500		CPXRF	84AHL 01					
8320	70		ITNA	85VOG 01					
8386			ICPES	85PEA 01					
8400	60		ICPES	82NAD 02	206	56		CPXRF	84AHL 01
8400	100	35	IENA	80GLA 03	271	14		ITNA	85SUN 01
8400	100	D	TCGS	80AND 01	277	5	11	ICPES	85SAT 01
8400	100	16	EXRF	82PEL 01	279	8		ICPES	84NAD 01
8400	100	16	EXRF	82PEL 01	280			ICPES	81WAL 01
8400	100		TCGS	79FAI 01	280	18		CPXRF	80KIR 01
8600	500		TCGS	85VOG 01	288	20		ITNA	83OBR 01
8855	830		ITNA	85SUN 01	289	3		ITNA	85VOG 01
9000			AA	82NAD 02	290	20		ITNA	82SUZ 02
9000	1440		ITNA	85FIL 01	290	20	35	IENA	80GLA 03
					292	16	35	ITNA	81GLA 02
					294	28	35	ITNA	81GLA 04
4.4	1.3		CPXRF	80KIR 01	295	5		ICPES	85HAR 01
5.7	0.2		ICPMS	86SCI 02	301	8		ITNA	80GAR 01
5.7	0.7		IENA	85RUC 01	304	5	11	ICPES	85SAT 01
					305	5		ICPES	84BOT 01
					324	16		ICPMS	86SCI 02
					344	30		ITNA	85FIL 01
					360	40		TCGS	79FAI 01
2.4	0.1		ITNA	84SUZ 02	360	40	D	TCGS	80AND 01
<u>U (ug/g)</u>					<u>W (ug/g)</u>				
8.9	0.7		ITNA	85FIL 01	4.71	0.37		ITNA	85SUN 01
9.66	0.25		ITNA	85SUN 01	5.4	0.4	35	IENA	80GLA 03
9.7	0.8		ITNA	84SUZ 02	5.4	0.4	D	NAA	81GLA 04
9.83	0.9		IENA	83OBR 01	5.4	0.8		ITNA	83OBR 01
10.2	0.02		ICPMS	86SCI 02	5.9	0.4		ITNA	82SUZ 02
10.2	0.1	35	IENA	80GLA 03	6.4	0.6		ITNA	84SUZ 02
10.2	0.2		DNA	80GAR 01	6.9	1.2		RENA	82GLA 02
10.2	0.3		DNA	82GLA 02					
10.2	0.8		FLUOR	86KAN 01					
10.3	0.2		DNA	85GAU 04					

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Y (ug/g)</u>					
74	5		CPXRF	84AHL 01	
81		6	EXRF	84JEN 01	
82		6	EXRF	84JEN 01	
89	4		ICPES	85HAR 01	
101.4	1		WXRF	84KYL 01	
<u>Yb (ug/g)</u>					
6.02	0.26		ITNA	85SUN 01	
6.9	0.3		ITNA	82SUZ 02	
7.2	0.3		ITNA	84GLA 11	
7.5	0.2	17	ITNA	84KYL 01	
7.5	0.3	17	ITNA	84KYL 01	
7.5	0.5		ITNA	82GLA 02	
8.2		35	ITNA	81GLA 04	
8.3	0.7		ITNA	84SUZ 02	
10	1.8		ITNA	80GAR 01	
<u>Zn (ug/g)</u>					
189		6	AF	84NAR 02	
191			ICPES	85NAR 02	
191		6	AF	84NAR 02	
196			AF	85NAR 02	
201	11		CPXRF	84AHL 01	
218	18		CPXRF	80KIR 01	
220	10		ICPES	84BOT 01	
220	50		ITNA	80GAR 01	
222	7	5	IENA	80GLA 03	
225	32		AA	82HAR 01	
226	19		ICPES	84NAD 01	
230			AA	82GLA 02	
230	8		ICPMS	86SCI 02	
233	3	11	ICPES	85SAT 01	
235		6	EXRF	84JEN 01	
237		6	EXRF	84JEN 01	
243	10	11	ICPES	85SAT 01	
245	3		ICPES	85HAR 01	
250	20	12	ITNA	82SUZ 02	
250	30	12	ITNA	82SUZ 02	
256	12	5	IENA	80GLA 03	
263	2		WXRF	84KYL 01	
<u>Zr (ug/g)</u>					
220	13		CPXRF	84AHL 01	
262.1	1.5		WXRF	84KYL 01	
300	30	5	IENA	80GLA 03	
370	50	5	IENA	80GLA 03	
400	50	12	ITNA	82SUZ 02	
410	40	12	ITNA	82SUZ 02	

TABLE 1634-1: COMPILED DATA FOR NBS SRM 1634 TRACE METALS IN FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		AA		NAA		ICPES		OTHER METHODS	
		Mean ± SD	n	Mean ± SD	n	Mean	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)
As	ng/g	95		70 ± 15	(5)	63		56 - 95		—		70 ± 15	(5)	—		—	
Au	ng/g	—		24.5	(1)	—		—		—		24.5	(1)	—		—	
Be	ng/g	< 10		—		—		—		—		—		—		—	
Br	ng/g	—		39.8 ± 0.9	(4)	39.1		39 - 41		—		40 ± 1	(3)	—		—	
Ca	ug/g	—		15	(1)	—		—		—		15	(1)	—		—	
Cd	ug/g	< 10		5	(1)	—		—		5	(1)	—		—		—	
Cl	ug/g	—		8.1 ± 0.3	(3)	8		7.8 - 8.4		—		8.2	(2)	—		—	
Co	ng/g	—		310 ± 50	(6)	301		250 - 400		—		320 ± 50	(5)	—		—	
Cr	ng/g	90		97 ± 15	(4)	93		80 - 116		—		97 ± 15	(4)	—		—	
Cu	ng/g	—		220	(1)	—		—		—		220	(1)	—		—	
Eu	ng/g	—		11	(1)	—		—		—		11	(1)	—		—	
Fe	ug/g	13.5 ± 1.0		14 ± 2	(17)	14.1		10.8 - 20		14.1 (1)		19 ± 6	(6)	15 ± 4	(3)	14 ± 2	(7)
Fe	ug/g	—		—		—		—		—		—		—		12.3	(1)
Hg	ng/g	2.3		2.3	(2)	—		2.3 - 2.3		—		2.3	(2)	—		—	
K	ug/g	—		315	(1)	—		—		—		315	(1)	—		—	
Mn	ng/g	120		200 ± 90	(4)	190		110 - 320		—		200 ± 90	(4)	—		—	
Mo	ng/g	—		870	(1)	—		—		—		870	(1)	—		—	
Na	ug/g	—		12 ± 2	(5)	12		11.2 - 15.3		—		12.9 ± 1.8	(4)	—		—	
Ni	ug/g	36 ± 4		35.4 ± 2.5	(20)	35.2		31.1 - 39.5		31.1 (1)		37 ± 3	(4)	35.6 ± 1.0	(3)	34 ± 2	(7)
Ni	ug/g	—		—		—		—		—		—		—		38.13 ± 0.06	(3)
Pb	ng/g	41 ± 5		45.5	(2)	—		41 - 50		50 (1)		—		—		35.2	(1)
S	%	2.14 ± 0.02		2.13 ± 0.11	(10)	2.15		2 - 2.3		—		2.19 ± 0.14	(3)	2.20	(2)	2.17	(1)
S	%	—		—		—		—		—		—		—		2.00	(1)
S	%	—		—		—		—		—		—		—		2.00	(1)
Sb	ng/g	—		11 ± 2	(3)	10		10 - 14		—		11 ± 2	(3)	—		—	
Sc	ug/g	—		1.38	(1)	—		—		—		1.38	(1)	—		—	
Se	ng/g	—		170 ± 26	(5)	170		138 - 200		—		170 ± 26	(5)	—		—	
V	ug/g	320 ± 15		312 ± 11	(17)	311		283 - 326		326 (1)		299 ± 20	(5)	318 ± 4	(3)	309 ± 14	(7)
V	ug/g	—		—		—		—		—		—		—		317	(1)
Zn	ug/g	0.23 ± 0.05		0.32 ± 0.16	(3)	0.3		0.17 - 0.48		—		0.32 ± 0.16	(3)	—		—	

TABLE 1634-2: INDIVIDUAL DATA FOR NBS SRM 1634 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>As (ng/g)</u>										
56			ITNA	77FIL 01		<	800	L	EXRF	79GIA 01
62	13		ITNA	85FIL 02		220	20		ITNA	73SHE 01
63	3		ITNA	78BER 02						
70			ITNA	78WEA 01						
95			RTNA	74ORV 01						
120			ITNA	81SHA 01		11	4		ITNA	85FIL 02
<u>Au (ng/g)</u>										
24.5	0.7		ITNA	73SHE 01		10.8	3.3	32	EXRF	78KUB 01
						12.3			POL	74MAI 01
<u>Br (ng/g)</u>										
39			ITNA	77FIL 01		12.4	1.6		ITNA	73SHE 01
39.1	5.3		UU	77PAC 01		12.5	2.2		UU	77PAC 01
40			ITNA	78WEA 01		12.7	3		EXRF	80SCH 07
41	4		ITNA	78BER 02		13			ICPES	79MER 01
240	70		ITNA	73SHE 01		13.4	0.2		ICPES	83BRO 02
330	90		ITNA	85FIL 02		13.5	1.2		ITNA	81SHA 01
						14	1.5		EXRF	79GIA 01
						14.1	0.6		AA	74RAI 01
						14.2	1.5		ITNA	74RAI 01
<u>Ca (ug/g)</u>										
15	2		ITNA	73SHE 01		14.4	1.7	32	EXRF	78KUB 01
						15.1	2.4	32	EXRF	78KUB 01
<u>Cd (ng/g)</u>										
						16.2	2.8	32	EXRF	78KUB 01
<	10	L	RTNA	74ORV 01		16.9	2.5	32	EXRF	78KUB 01
5			FAA	74RAI 01		20			ITNA	77FIL 01
						20	2		ICPES	84BAR 03
						25			ITNA	78WEA 01
						27.5	6.5		ITNA	85FIL 02
<u>Cl (ug/g)</u>										
7.8	0.5		UU	77PAC 01		<	10	L	ITNA	81SHA 01
8			ITNA	78WEA 01		<	10		ITNA	77FIL 01
8.4	0.5		ITNA	78BER 02		2.3	0.2		RTNA	84DEL 01
18	0.7		ITNA	73SHE 01		2.3	0.2		RTNA	74ORV 01
						22	15		ITNA	73SHE 01
<u>Co (ng/g)</u>										
250	10		ITNA	73SHE 01						
301			ITNA	77FIL 01		315			ITNA	77FIL 01
301	14		UU	77PAC 01						
310	15		ITNA	78BER 02						
330	60		ITNA	85FIL 02						
400			ITNA	78WEA 01						
						110	10		ITNA	78BER 02
						190			ITNA	73SHE 01
<u>Cr (ng/g)</u>										
80			ITNA	81SHA 01		200			ITNA	81SHA 01
93			ITNA	77FIL 01		320			ITNA	78WEA 01
100			ITNA	78WEA 01						
116	35		ITNA	73SHE 01						
220	60		ITNA	85FIL 02						
						870	80		ITNA	78BER 02
<u>Hg (ng/g)</u>										
<u>K (ug/g)</u>										
<u>Mn (ng/g)</u>										
<u>Mo (ng/g)</u>										

TABLE 1634-2: INDIVIDUAL DATA FOR NBS SRM 1634 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Na (ug/g)</u>									
11.2			ITNA	77FIL 01	10			ITNA	77FIL 01
11.2	0.7		UU	77PAC 01	10			ITNA	78WEA 01
12			ITNA	78WEA 01	14	3		ITNA	73SHE 01
13.2	1.5		ITNA	78BER 02	90	110		ITNA	85FIL 02
15.3	1.9		ITNA	85FIL 02					
<u>Ni (ug/g)</u>									
31.1	2.1		AA	74RAI 01	1.38	0.76		ITNA	85FIL 02
32	1	32	EXRF	78KUB 01					
32	1.6		EXRF	79GIA 01					
32	2	32	EXRF	78KUB 01					
33	1	32	EXRF	78KUB 01					
33	2.3		ITNA	85FIL 02					
35	0.3		ICPES	83BRO 02					
35	2		ICPES	84BAR 03					
35	2	32	EXRF	78KUB 01					
35.2			POL	74MAI 01					
36	1	32	EXRF	78KUB 01					
36.7			ICPES	79MER 01					
36.9	2.7		EXRF	80SCH 07					
37	2		ITNA	78BER 02					
37.4			ITNA	77FIL 01					
37.4	1.5		UU	77PAC 01					
38.1	6		IDMS	74M00 01					
38.1	6		IDMS	74M00 01					
38.2	6		IDMS	74M00 01					
39.5	2.26		ITNA	73SHE 01					
<u>Pb (ng/g)</u>									
<	500		ICPES	79MER 01	318			ICPES	84BAR 03
<	1500	L	EXRF	79GIA 01	318	15		ITNA	78BER 02
41			POL	74MAI 01	323	4		ICPES	83BRO 02
50			FAA	74RAI 01	323	9	32	EXRF	78KUB 01
					325	11	32	EXRF	78KUB 01
					326	6.8		AA	74RAI 01
<u>S (%)</u>									
2	0.1		TITR	80MCC 01					
2	0.2		MECA	80MCC 01					
2.04	0.39		ITNA	73SHE 01					
2.05	0.4		UU	77PAC 01					
2.15	0.02		ICPES	84BAR 03					
2.154	0.009		IC	80MCC 01					
2.17			XRF	80MCC 01					
2.24	0.05		ITNA	81SHA 01					
2.24	0.05		ICPES	81WAL 02					
2.3	0.3		ITNA	78BER 02					
<u>Zn (ug/g)</u>									
					<	0.6		ICPES	79MER 01
					<	0.6	L	EXRF	79GIA 01
					<	1	L	ITNA	81SHA 01
					0.17	0.02		RTNA	74ORV 01
					0.3			ITNA	78WEA 01
					0.48	0.12		ITNA	73SHE 01
					1.0	0.4		ITNA	85FIL 02

TABLE 1634A-1: COMPILED DATA FOR NBS SRM 1634A TRACE METALS IN FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		NAA		ICPES		XRF		OTHER METHODS	
		Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean (n)	SD (n)	Mean ± SD (n)	n	Mean (n)	SD (n)	Mean (n)	Method
As	ng/g	120		141 (1)		---		---		141 (1)		---		---		---	---
Ba	ug/g	---		5.98 (1)		---		---		5.98 (1)		---		---		---	---
Be	ng/g	6		---		---		---		---		---		---		---	---
Br	ug/g	< 1		0.88 (1)		---		---		0.88 (1)		---		---		---	---
Ca	ug/g	16		16.8 (2)		---		16 - 17.5		---		16 (1)		17.5 (1)		---	---
Cd	ng/g	2		---		---		---		---		---		---		---	---
Ce	ng/g	---		757	(1)	---		---		757 (1)		---		---		---	---
Cl	ug/g	31		42 (2)		35 - 49.9		42.45 (2)		---		---		---		---	---
Co	ng/g	300		44.0 (2)		280 - 600		600 (1)		280 (1)		---		---		---	---
Cr	ug/g	0.7		0.71 (2)		0.6 - 0.82		0.82 (1)		0.6 (1)		---		---		---	---
Cs	ng/g	---		22 (1)		---		---		22 (1)		---		---		---	---
Cu	ug/g	---		< 1		---		---		---		---		< 1		---	---
Eu	ug/g	---		11.6 (1)		---		---		11.6 (1)		---		---		---	---
Fe	ug/g	31		32 ± 6 (5)		30.8		26 - 41		41 (1)		28.4 (2)		30.6 (2)		---	---
Ga	ng/g	---		106 (1)		---		---		106 (1)		---		---		---	---
Hg	ug/g	< 2		< 1.9		---		---		---		---		< 1.9		---	---
K	ug/g	---		< 4.5		---		---		---		---		< 4.5		---	---
La	ug/g	---		2.04 (1)		---		---		2.04 (1)		---		---		---	---
Mn	ng/g	190 ± 20		195 (2)		180 - 210		---		---		195 (2)		---		---	---
Mo	ng/g	---		110 (1)		---		---		---		110 (1)		---		---	---
N	%	---		1.23 (1)		---		---		---		---		---		1.23 (1)	IC
Na	ug/g	87 ± 4		102 (1)		---		---		102 (1)		---		---		---	---
Nd	ug/g	---		0.9 (1)		---		0.9 (1)		---		---		---		---	---
Ni	ug/g	29 ± 1		27.5 ± 1.1 (8)		27		26 - 29.2		26.3 (1)		27.6 ± 1.0 (4)		28.4 (2)		26 (1)	AA
P	ug/g	---		1090 (1)		---		---		---		---		1090 (1)		---	---
Pb	ug/g	2.8 ± 0.08		2.3 ± 0.3 (3)		2.13		2.13 - 2.68		---		2.68 (1)		2.13 (2)		---	---
Rb	ng/g	---		< 610		---		---		---		---		< 610		---	---
S	%	2.85 ± 0.05		2.86 ± 0.03 (6)		2.848		2.82 - 2.91		---		2.89 (2)		2.86 (2)		2.83 (2)	NH
S	%	---		---		---		---		---		---		---		2.12 (1)	IC
Sb	ng/g	---		34 (1)		---		---		34 (1)		---		---		---	---
Sc	ug/g	---		2.3 (1)		---		---		2.3 (1)		---		---		---	---
Se	ng/g	150 ± 20		190 (1)		---		---		190 (1)		---		---		---	---
Si	ug/g	---		< 270		---		---		---		---		< 270		---	---
Sm	ug/g	---		43 (1)		---		---		43 (1)		---		---		---	---
Sr	ug/g	---		< 4.3		---		---		---		---		< 4.3		---	---
Ti	ug/g	---		< 11		---		---		---		---		< 11		---	---
V	ug/g	56 ± 2		55.6 ± 1.6 (8)		55.5		54 - 58.5		56.5 (1)		56.2 ± 0.8 (4)		54 (2)		54 (1)	AA
Zn	ug/g	2.7 ± 0.2		2.83 ± 0.17 (5)		2.89		2.54 - 3.0		2.89 (1)		2.67 (2)		2.95 (2)		---	---

TABLE 1634A-2: INDIVIDUAL DATA FOR NBS SRM 1634A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>As (ng/g)</u>									
<	650	32	EXRF	83SAN 02	<	1	32	EXRF	83SAN 02
<	650	32	EXRF	83SAN 02	<	1	32	EXRF	83SAN 02
141	17		ITNA	85FIL 02					
<u>Ba (ug/g)</u>									
5.98	1.77		ITNA	85FIL 02	11.6	5.5		ITNA	85FIL 02
<u>Br (ug/g)</u>									
<	0.5	32	EXRF	83SAN 02	26	4		ICPES	84BAR 03
<	0.5	32	EXRF	83SAN 02	30.4	1.1	32	EXRF	83SAN 02
0.88	0.19		ITNA	85FIL 02	30.8	0.4		ICPES	83MAH 05
					30.8	1.1	32	EXRF	83SAN 02
					41	7.2		ITNA	85FIL 02
<u>Ca (ug/g)</u>									
<	42	32	EXRF	83SAN 02	<u>Ga (ng/g)</u>				
16	1		ICPES	84BAR 03	<	450	32	EXRF	83SAN 02
17.5	2.2	32	EXRF	83SAN 02	<	450	32	EXRF	83SAN 02
					106	25		ITNA	85FIL 02
<u>Ce (ng/g)</u>									
757	64		ITNA	85FIL 02	<u>Hg (ug/g)</u>				
<u>Cl (ug/g)</u>									
<	68	32	EXRF	83SAN 02	<	1.9	32	EXRF	83SAN 02
<	350	32	EXRF	83SAN 02	<	1.9	32	EXRF	83SAN 02
35			ITNA	86GAU 01	<u>K (ug/g)</u>				
49.9	3.4		ITNA	83LI 01	<	4.5	32	EXRF	83SAN 02
					<	66	32	EXRF	83SAN 02
<u>Co (ng/g)</u>									
<	1400	32	EXRF	83SAN 02	2.04	0.18		ITNA	85FIL 02
<	1400	32	EXRF	83SAN 02	<u>La (ug/g)</u>				
280	60		ICPES	83MAH 05					
600	370		ITNA	85FIL 02	<u>Mn (ng/g)</u>				
<u>Cr (ug/g)</u>									
<	4.8	32	EXRF	83SAN 02	<	2600	32	EXRF	83SAN 02
<	4.8	32	EXRF	83SAN 02	<	2600	32	EXRF	83SAN 02
0.6			ICPES	85NG 01	180	4		ICPES	83MAH 05
0.82	0.11		ITNA	85FIL 02	210			ICPES	85NG 01
<u>Cs (ng/g)</u>									
22	9		ITNA	85FIL 02	110	3		ICPES	83MAH 05
					<u>Mo (ng/g)</u>				
					<u>N (%)</u>				
					1.23	0.02		IC	83NAD 01

TABLE 1634A-2: INDIVIDUAL DATA FOR NBS SRM 1634A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Na (ug/g)</u>										
102	16		ITNA	85FIL 02		2.3	1.6		ITNA	85FIL 02
<u>Nd (ug/g)</u>										
0.9	0.26		ITNA	85FIL 02		<	540	32	EXRF	83SAN 02
<u>Ni (ug/g)</u>										
26		AA	85FAB 01			<	270	32	EXRF	83SAN 02
26.3	2.5	ITNA	85FIL 02			<	3000	32	EXRF	83SAN 02
27		ICPES	85NG 01							
27	2	ICPES	84BAR 03							
27.3	0.4	ICPES	85FAB 01							
28.4	1.3	32	EXRF	83SAN 02						
28.5	1.3	32	EXRF	83SAN 02						
29.2	0.5	ICPES	83MAH 05			43	3.8		ITNA	85FIL 02
<u>P (ug/g)</u>										
<	1500	32	EXRF	83SAN 02		<	4.3	32	EXRF	83SAN 02
1090	53	32	EXRF	83SAN 02		<	4.3	32	EXRF	83SAN 02
<u>Pb (ug/g)</u>										
2.13	0.87	32	EXRF	83SAN 02		<	11	32	EXRF	83SAN 02
2.13	0.87	32	EXRF	83SAN 02		<	11	32	EXRF	83SAN 02
2.68	0.03	ICPES	83MAH 05							
<u>Rb (ng/g)</u>										
<	610	32	EXRF	83SAN 02		54		AA	85FAB 01	
<	610	32	EXRF	83SAN 02		54	4	32	EXRF	83SAN 02
<u>S (%)</u>										
2.12	0.01	IC	83NAD 01			54		EXRF	83SAN 02	
2.82	0.1	7	NM	83LI 01		54	4	32	EXRF	83SAN 02
2.84	0.08	7	NM	83LI 01		55.5		ICPES	85NG 01	
2.848	0.09	32	EXRF	83SAN 02		55.5	1	ICPES	83MAH 05	
2.87	0.02		ICPES	85FAB 01		56.7	0.7	ICPES	85FAB 01	
2.881	0.027	32	EXRF	83SAN 02		57	2	ICPES	84BAR 03	
2.91	0.02		ICPES	84BAR 03		58.5	5	ITNA	85FIL 02	
<u>Sb (ng/g)</u>										
						2.54	0.03		ICPES	83MAH 05
34	31		ITNA	85FIL 02		2.8	0.3		ICPES	84BAR 03
						2.89	0.92		ITNA	85FIL 02
						2.9	0.5	32	EXRF	83SAN 02
						3	0.5	32	EXRF	83SAN 02

TABLE 1634B-1: COMPILED DATA FOR NBS SRM 1634B TRACE ELEMENTS IN FUEL OIL  
(revised 3/1/86)

ELEMENT	UNITS	NBS
		Mean $\pm$ SD
ASH	ug/g	700
Al	ug/g	16
As	ng/g	120 $\pm$ 20
Ba	ug/g	1.3
Ca	ug/g	15
Co	ng/g	320 $\pm$ 40
Cr	ug/g	0.7
Fe	ug/g	31.6 $\pm$ 2.0
HEAT	BTU/lb	18100
Hg	ng/g	< 1
Mn	ng/g	230 $\pm$ 30
Na	ug/g	90
Ni	ug/g	28 $\pm$ 2
Pb	ug/g	2.8
S	%	2.80 $\pm$ 0.05
Se	ng/g	180 $\pm$ 40
V	ug/g	55.4 $\pm$ 1.1
Zn	ug/g	3.0 $\pm$ 0.2

TABLE 1635-1: COMPILED DATA FOR NBS SRM 1635 TRACE ELEMENTS IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		AA		NAA		OTHER METHODS			
		Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Method	
ASH	%	---		4.65	(2)	---		4.5 - 4.8	---	---		---		4.8	(1)	CB	
Ag	ng/g	---		< 38		---		---		< 38		< 2500		XRF		---	
Al	ug/g	3200		2950 ± 270	(11)	2960	2600 - 3400	2750	(2)	2930 ± 170	(6)	2976	(2)	ICPES	3400	(1)	TCGS
As	ng/g	420 ± 150		404 ± 76	(11)	400	280 - 530	360 ± 56	(5)	460 ± 60	(5)	---		330	(1)	AF	
Au	ng/g	---		< 6		---		---		< 6		---		---		---	
B	ug/g	---		115 ± 17	(3)	105	104.5 - 135	---		135	(1)	---		105	(2)	TCGS	
Ba	ug/g	---		73 ± 5	(7)	72	67 - 81	---		72 ± 4	(6)	81	(1)	XRF		---	
Be	ug/g	---		0.48 ± 0.02	(3)	0.49	0.46 - 0.49	0.48 ± 0.02	(3)	---		---		---		---	
Bi	ug/g	---		< 1		---		---		---		---		< 1		XRF	
Br	ug/g	---		1.4 ± 0.4	(6)	1.22	0.84 - 1.90	---		1.4 ± 0.4	(6)	---		---		---	
C	%	---		62.6	(2)	---	59 - 66.23	---		---		66.23	(1)	CB	59	(1)	TCGS
Ca	ug/g	---		5350 ± 340	(11)	5400	4800 - 5834	5600	(2)	5220 ± 350	(6)	5460	(2)	ICPES	5400	(1)	TCGS
Cd	ng/g	30 ± 10		29	(1)	---		---		29	(1)	---		---		---	
Ce	ug/g	3.6		3.40 ± 0.14	(6)	3.4	3.2 - 3.60	---		3.40 ± 0.14	(6)	---		---		---	
Cl	ug/g	---		26.8 ± 1.0	(4)	26	26 - 28	---		26.5	(2)	28	(1)	IC	26	(1)	TCGS
Co	ng/g	650		621 ± 19	(9)	620	590 - 650	610	(2)	624 ± 20	(7)	700	(1)	XRF		---	
Cr	ug/g	2.5 ± 0.3		2.3 ± 0.3	(12)	2.48	1.9 - 2.9	2.7 ± 0.7	(4)	2.3 ± 0.2	(8)	2	(1)	XRF		---	
Cs	ng/g	---		53 ± 7	(3)	53	46 - 60	---		53 ± 7	(3)	---		---		---	
Cu	ug/g	3.6 ± 0.3		3.60 ± 0.05	(6)	3.6	3.56 - 3.70	3.62 ± 0.05	(4)	3.56	(2)	3	(1)	XRF		---	
Dy	ng/g	---		330	(2)	---	310 - 350	---		330	(2)	---		---		---	
Er	ng/g	---		< 2000		---		---		---		< 2000		XRF		---	
Eu	ng/g	60		62 ± 3	(4)	61	59 - 66	---		62 ± 3	(4)	---		---		---	
F	ug/g	---		53 ± 30	(3)	63	20 - 77	---		---		---		---		---	
Fe	ug/g	2390 ± 50		2290 ± 60	(11)	2300	2180 - 2380	2300	(2)	2280 ± 60	(7)	2380	(1)	ICPES	2200	(1)	TCGS
Ga	ug/g	1.05		1.1	(1)	---		---		---		1.1	(1)	XRF		---	
Gd	ng/g	---		340 ± 105	(3)	350	230 - 440	---		440	(1)	290	(2)	TCGS		---	
Ge	ug/g	---		0.5	(1)	---		---		---		0.5	(1)	XRF		---	
H	%	---		4.07	(2)	---	3.96 - 4.18	---		---		4.18	(1)	CB	3.96	(1)	TCGS
H2O-	%	---		15.4	(2)	---	14 - 16.8	---		---		16.8	(1)	GRAV	14	(1)	FD
Hf	ng/g	290		288 ± 33	(6)	290	240 - 340	---		288 ± 33	(6)	---		---		---	
Hg	ng/g	---		20	(2)	---	5 - 35	5	(1)	35	(1)	---		49	(1)	---	
Ho	ng/g	---		49	(1)	---	---	---		49	(1)	---		---		---	

TABLE 1635-1: COMPILED DATA FOR NBS SRM 1635 TRACE ELEMENTS IN COAL (cont.)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS	
			Mean ± SD	n			Mean ± SD	n	Mean ± SD	n	Mean ± SD	n
I	ng/g	---	600	(1)	---	---	---	---	600	(1)	---	---
In	ng/g	---	5	(1)	---	---	---	5	(1)	---	---	---
K	ug/g	---	96 ± 16	(6)	97	70 - 120	100	(2)	105	(2)	70	(1) IC/PES
La	ug/g	---	1.8 ± 0.3	(7)	1.93	1.38 - 2.10	---	---	1.8 ± 0.3	(6)	2	(1) XRF
Li	ug/g	---	0.83	(1)	---	---	---	---	0.83	(1)	0.83	(1) IC/PES
Lu	ng/g	---	28 ± 9	(4)	27	15 - 36	---	---	28 ± 9	(4)	---	---
Mg	ug/g	---	1040 ± 130	(6)	1000	940 - 1300	1000	(2)	1080 ± 190	(3)	1013	(1) IC/PES
Mn	ug/g	21.4 ± 1.5	21.4 ± 1.5	(13)	21.8	19 - 24	21.8 ± 0.7	(4)	20.4 ± 1.3	(6)	23	(1) XRF
Mn	ug/g	---	---	---	---	---	---	---	---	24	(1)	21.4 (1) ESR
Mo	ng/g	---	270	(1)	---	---	---	270	(1)	---	---	---
N	%	---	1.16 ± 0.32	(3)	1.0	0.95 - 1.52	---	---	0.95	(1)	IC	1.0 (1) TCGS
N	%	---	---	---	---	---	---	---	1.52	(1)	CB	---
Na	ug/g	2400	2390 ± 200	(12)	2400	2070 - 2800	2900	(2)	2350 ± 80	(7)	2180	(2) IC/PES
Na	ug/g	---	---	---	---	---	---	---	2700	(1)	TGS	2420 (1) XRF
Nb	ug/g	---	< 1	---	---	---	---	---	< 1	---	XRF	---
Nd	ug/g	---	1.38	(2)	---	1.35 - 1.40	---	---	1.38	(2)	---	---
Ni	ug/g	1.74 ± 0.10	1.8 ± 0.2	(6)	1.8	1.5 - 2.20	1.8 ± 0.30	(4)	1.78	(2)	3	(1) XRF
O	%	---	30 ± 8	(3)	33	20.79 - 34.99	---	---	---	60	(1)	IC/PES
P	ug/g	---	61.5	(2)	---	60 - 63	---	---	60	(1)	IC/PES	63 (1) XRF
Pb	ug/g	1.9 ± 0.2	1.9 ± 0.4	(6)	1.9	1.48 - 2.60	1.82 ± 0.20	(5)	---	2.6	(1)	---
Pb-210	pCi/g	---	0.0699	(1)	---	---	---	---	---	2.6	(1)	---
Pr	ug/g	---	< 1	---	---	---	---	---	< 4.3	---	< 1	XRF
Rb	ug/g	---	0.85 ± 0.10	(3)	0.83	0.76 - 0.95	---	0.85 ± 0.10	(3)	---	---	---
S	ug/g	3300 ± 300	3360 ± 245	(8)	3300	2880 - 3640	---	---	2880	(1)	IC/PES	3540 (1) XRF
S	ug/g	---	---	---	---	---	---	---	3300	(1)	IC	3460 ± 180 (3) CB
S	ug/g	ratio	22.546	(1)	---	---	---	---	3200	(1)	TGS	3540 (1) IDMS
S-32/34	ratio	---	0.1778	(1)	---	---	---	---	---	22.546	(1)	IDMS
S-33/34	ratio	---	0.1778	(1)	---	---	---	---	0.1778	(1)	0.1778	(1) IDMS

TABLE 1635-1: COMPILED DATA FOR NBS SRM 1635 TRACE ELEMENTS IN COAL (cont.)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS	
			Mean ± SD	n			Mean ± SD	n	Mean ± SD	n	Mean ± SD	n
Sb	ng/g	140	150 ± 30	(10)	140	120 - 200	177 ± 40	(3)	144 ± 17	(7)	---	---
Sc	ng/g	630	630 ± 50	(6)	610	560 - 700	---	---	630 ± 50	(6)	---	---
Se	ug/g	0.9 ± 0.3	0.94 ± 0.09	(14)	0.97	0.79 - 1.10	0.92 ± 0.09	(5)	0.95 ± 0.10	(8)	1.2 (1) XRF	0.9 (1) AF
Si	ug/g	---	5900 ± 500	(5)	6000	5200 - 6500	6100	(2)	---	6500 (1) IC PES	5600 (1) 14NAA	
Si	ug/g	---	---	---	---	---	---	---	5200 (1) TGCS	---	---	
Sm	ng/g	---	290 ± 40	(7)	270	250 - 340	---	---	290 ± 40	(6)	250 (1) TGCS	---
Sn	ng/g	---	< 600	---	---	---	---	---	< 600	XRF	---	---
Sr	ug/g	---	121 ± 19	(5)	127	90 - 140	---	---	125 ± 6	(3)	90 (1) IC PES	140 (1) XRF
Ta	ng/g	---	45.8 ± 1.7	(4)	45	44 - 48	---	---	45.8 ± 1.7	(4)	---	---
Tb	ng/g	---	42	(2)	---	35 - 50	---	---	42.5 (2)	---	---	---
Te	ng/g	---	< 290	---	---	---	---	---	< 290	---	---	---
Th	ng/g	620 ± 40	610 ± 30	(7)	630	560 - 640	---	---	610 ± 30	(7)	---	---
Th-228	pCi/g	---	0.0648	(1)	---	---	---	---	0.0648 (1)	NM	---	---
Th-230	pCi/g	---	0.0765	(1)	---	---	---	---	0.0765 (1)	NM	---	---
Th-232	pCi/g	---	0.0619	(1)	---	---	---	---	0.0619 (1)	NM	---	---
Ti	ug/g	200	202 ± 6	(9)	200	190 - 210	---	---	207 ± 6	(3)	201 (1) IC PES	204 (2) XRF
Tl	ug/g	---	---	---	---	---	---	---	200 (2) COLOR	---	190 (1) TC GS	---
Tm	ng/g	---	63	(1)	---	---	---	---	63 (1)	---	---	---
U	ng/g	240 ± 20	250 ± 40	(5)	240	200 - 320	---	250 ± 50	(5)	---	---	---
U-234	pCi/g	---	0.0719	(1)	---	---	---	---	0.0719 (1)	NM	---	---
U-235	pCi/g	---	0.0069	(1)	---	---	---	---	0.0049 (1)	NM	---	---
U-238	pCi/g	---	0.0731	(1)	---	---	---	---	0.0731 (1)	NM	---	---
V	ug/g	5.2 ± 0.5	4.5 ± 0.6	(10)	4.5	3.5 - 6.7	5.6 ± 1.4	(5)	4.5 ± 0.3	(6)	4 (1) XRF	---
W	ng/g	---	190	(2)	---	173 - 210	---	192	(2)	---	---	---
Y	ug/g	---	1.9	(1)	---	---	---	---	1.9 (1) XRF	---	---	---
Yb	ng/g	---	165 ± 16	(5)	170	140 - 179	---	165 ± 16	(5)	---	---	---
Zn	ug/g	4.7 ± 0.5	5.8 ± 1.2	(9)	5.4	4.2 - 7.8	4.8 ± 0.4	(4)	6.8 ± 1.1	(4)	5.6 (1) XRF	---
Zr	ug/g	---	16 ± 2	(4)	15.7	15 - 19.4	---	17 ± 2	(3)	15 (1) XRF	---	---

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>						<u>Ba (ug/g)</u>				
<	38	L	ITNA	82SUZ 02		47	2		ICPES	84NAD 01
<	500		ITNA	86GLA 01		67	20	9	ITNA	82SUZ 02
<	2500	L	WXRF	82MIL 01		69	6		ITNA	85GAU 04
						70	9		ITNA	80GER 01
<u>Al (ug/g)</u>						72	17	5	ITNA	80TOU 01
2600			ITNA	84CLE 01		77	24	9	ITNA	82SUZ 02
2600	100		ICPES	84NAD 01		81		34	WXRF	82MIL 01
2700		34	AA	83BET 01						
2800	500	34	AA	83BET 01						
2900	200		ITNA	86GLA 01						
2960	170		ITNA	85GAU 04						
3000	300		ITNA	82SUZ 02						
3000	300		ITNA	80GER 01						
3100	100		ITNA	82HAM 01						
3352	25		ICPES	85PEA 01						
3400	400	D	TCGS	80GER 01						
3400	400	D	TCGS	80AND 01						
3400	400		TCGS	79FAI 01						
<u>As (ng/g)</u>						<u>Br (ug/g)</u>				
280	20		HAA	82NAD 01		<	1		ITNA	86GLA 01
320			FAA	82WIL 01		0.84	0.14		ITNA	85GAU 04
330			AF	82WIL 01		1.07	0.17		ITNA	82SUZ 02
400		11	HAA	82CRO 03		1.22	0.24		ITNA	84SUZ 02
400		11	HAA	82CRO 03		1.5	0.07		ITNA	82HAM 01
400	50		ITNA	82SUZ 02		1.6	0.3		ITNA	80GER 01
400	100		HAA	85LIN 02		1.9	0.2	5	ITNA	80TOU 01
430	40		RTNA	84DEL 01		3		34	WXRF	82MIL 01
440	50		RTNA	78GAL 01						
510	40		ITNA	85GAU 04						
530	50		ITNA	82HAM 01						
700		34	WXRF	82MIL 01		59	3		TCGS	79FAI 01
700	400		ITNA	80GER 01		59	3	D	TCGS	80GER 01
						59	3	D	TCGS	80AND 01
						66.23	0.06		CB	80SCH 02
<u>ASH (%)</u>						<u>Ca (ug/g)</u>				
4.5			UU	85SHI 01		4800			ITNA	84CLE 01
4.8		34	CB	82MIL 01		4900	500		ITNA	82HAM 01
<u>Au (ng/g)</u>						5090	30		ICPES	84NAD 01
<	6		ITNA	86GLA 01		5100	500		ITNA	86GLA 01
						5300	250		ITNA	85GAU 04
						5400	200	D	TCGS	80AND 01
						5400	200		TCGS	79FAI 01
						5400	200	D	TCGS	80GER 01
						5500	400	34	AA	83BET 01
104.5	2.6		TCGS	79FAI 01		5500	900		ITNA	82SUZ 02
105	3	D	TCGS	80GER 01		5700		34	AA	83BET 01
105	3		TCGS	80AND 01		5700	700		ITNA	80GER 01
135	11		ITNA	82SCH 05		5834.4			ICPES	85PEA 01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cd (ng/g)</u>					<u>Cr (ug/g) cont.</u>					
<	380	L	ITNA	82SUZ 02		2.55	0.17		ITNA	85GAU 04
<	450		ITNA	84SUZ 02		2.6		34	FAA	83BET 01
<	3000	L	WXRF	82MIL 01		2.6	0.3	12	ITNA	82SUZ 02
29	3		RTNA	78GAL 01		2.9	0.6	34	FAA	83BET 01
						3.5	0.9	11	AA	82LIN 03
						4	1		ITNA	86GLA 01
<u>Ce (ug/g)</u>					<u>Cs (ng/g)</u>					
3.2	0.3		ITNA	84SUZ 02		<	500	L	WXRF	82MIL 01
3.3	0.2	12	ITNA	82SUZ 02		<	2100		ITNA	84SUZ 02
3.4	0.2	12	ITNA	82SUZ 02		46	5		ITNA	80GER 01
3.4	0.3		ITNA	85GAU 04		53	6		ITNA	82SUZ 02
3.5	0.5		ITNA	80GER 01		60	10		ITNA	85GAU 04
3.6	0.86		ITNA	82HAM 01						
8		34	WXRF	82MIL 01						
<u>Cl (ug/g)</u>					<u>Cu (ug/g)</u>					
26	2	D	TCGS	80GER 01		3		34	WXRF	82MIL 01
26	2	D	TCGS	80AND 01		3.56	0.18	RTNA	78GAL 01	
26	2		TCGS	79FAI 01		3.56	0.18	RTNA	84DEL 01	
26	4		ITNA	80GER 01		3.6		34	FAA	83BET 01
27	6		ITNA	85GAU 04		3.6	0.2	11	AA	82LIN 03
28	2		IC	83NAD 01		3.6	1	34	FAA	83BET 01
36		34	WXRF	82MIL 01		3.7	0.1	11	AA	82LIN 03
						14	3		ICPES	84NAD 01
<u>Co (ng/g)</u>					<u>Dy (ng/g)</u>					
590	60		ITNA	80GER 01		<	600		ITNA	86GLA 01
600	150	34	FAA	83BET 01		<	740	L	ITNA	82SUZ 02
610	180		ITNA	84SUZ 02		<	2000	L	WXRF	82MIL 01
620		34	FAA	83BET 01		310	40		ITNA	80GER 01
620	60		ITNA	82SUZ 02		350	40		ITNA	84SUZ 02
630	40		ITNA	85GAU 04						
630	50		ITNA	86GLA 01						
640			ITNA	84CLE 01						
650	70		ITNA	82HAM 01						
700		34	WXRF	82MIL 01		<	2000	L	WXRF	82MIL 01
<u>Cr (ug/g)</u>					<u>Eu (ng/g)</u>					
1.9			ITNA	84CLE 01		<	100		ITNA	86GLA 01
1.9	0.2	11	AA	82LIN 03		59	2		ITNA	82SUZ 02
2		34	WXRF	82MIL 01		61	5		ITNA	84SUZ 02
2	0.3		ITNA	82HAM 01		61	7		ITNA	80GER 01
2.3	0.2		ITNA	80GER 01		66	6		ITNA	85GAU 04
2.4	0.1		ITNA	84SUZ 02						
2.48	0.08		RTNA	78GAL 01						
2.5	0.2	12	ITNA	82SUZ 02						
						20			ISE	83KNA 01
						63	4		ISE	83BET 02
						77	1		IC	83NAD 01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference	
<u>Fe (ug/g)</u>					<u>Hf (ng/g)</u>					
1340	30		ICPES	84NAD 01	240	40	9	ITNA	82SUZ 02	
			ITNA	84CLE 01	270	40		ITNA	80GER 01	
2180	170		ITNA	84SUZ 02	290	20	9	ITNA	82SUZ 02	
2200	100		TCGS	79FAI 01	290	30		ITNA	85GAU 04	
2200	100	D	TCGS	80AND 01	300	30		ITNA	84SUZ 02	
2200	100	D	TCGS	80GER 01	340	40		ITNA	86GLA 01	
2200	200		ITNA	82HAM 01						
2300		34	AA	83BET 01						
2300	200		ITNA	86GLA 01						
2300	200		ITNA	80GER 01		<	48	ITNA	84SUZ 02	
2300	600	34	AA	83BET 01		<	56	L	ITNA	82SUZ 02
2320	70		ITNA	85GAU 04		<	1500	L	WXRF	82MIL 01
2330	240	12	ITNA	82SUZ 02		5	15	CVAA	82D00 01	
2340	140	12	ITNA	82SUZ 02		35	11	12	ITNA	82SUZ 02
2380			ICPES	85PEA 01						
<u>Ga (ug/g)</u>					<u>Ho (ng/g)</u>					
<	2	L	ITNA	82SUZ 02		<	1500	L	WXRF	82MIL 01
<	7		ITNA	86GLA 01		49	20	ITNA	84SUZ 02	
1.1		34	WXRF	82MIL 01						
<u>Gd (ng/g)</u>					<u>I (ng/g)</u>					
<	1500	L	WXRF	82MIL 01		<	750	ITNA	84SUZ 02	
230	10		TCGS	79FAI 01		<	860	L	ITNA	82SUZ 02
350	20		TCGS	80AND 01		<	1300	L	WXRF	82MIL 01
440	60		ITNA	84SUZ 02		600	300	ITNA	80GER 01	
<u>Ge (ug/g)</u>					<u>In (ng/g)</u>					
0.5		34	WXRF	82MIL 01		<	31	L	ITNA	82SUZ 02
						<	1000	L	WXRF	82MIL 01
						5	2	ITNA	80GER 01	
<u>H (%)</u>					<u>K (ug/g)</u>					
3.96	0.03	D	TCGS	80AND 01		70		ICPES	84NAD 01	
3.96	0.03	D	TCGS	80GER 01		90	90	ITNA	82SUZ 02	
3.96	0.03		TCGS	79FAI 01		97	6	D	TCGS	80GER 01
4.18	0.14		CB	80SCH 02		97	6	TCGS	79FAI 01	
						97	6	D	TCGS	80AND 01
<u>H2O- (%)</u>						100		AA	83BET 01	
14			FD	80KHA 02		100	20	34	AA	83BET 01
16.8			GRAV	85LIN 02		120	10	ITNA	80GER 01	
						199.2	39.84	ICPES	85PEA 01	

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference			
<u>La (ug/g)</u>													
1.38	0.07		ITNA	82SUZ	02		<	1000	L	WXRF	82MIL	01	
1.42	0.08		ITNA	84SUZ	02		<	5000		ITNA	86GLA	01	
1.78	0.09		ITNA	86GLA	01		270	100		ITNA	82SUZ	02	
1.93	0.08		ITNA	85GAU	04								
2		34	WXRF	82MIL	01								
2	0.25		ITNA	82HAM	01								
2.1	0.3		ITNA	80GER	01		0.95	0.01		IC	83NAD	01	
							1	0.1	D	TCGS	80GER	01	
<u>Li (ug/g)</u>													
							1	0.1	D	TCGS	80AND	01	
							1	0.1		TCGS	79FAI	01	
0.83	0.28		ICPES	84NAD	01		1.52	0.02		CB	80SCH	02	
<u>Lu (ng/g)</u>													
	<	30		ITNA	86GLA	01	2070	30		ICPES	84NAD	01	
15		3		ITNA	85GAU	04	2200	160		ITNA	82SCH	05	
27		4		ITNA	80GER	01	2279.424			ICPES	85PEA	01	
33		14		ITNA	84SUZ	02	2300	70		ITNA	86GLA	01	
36		7		ITNA	82SUZ	02	2320			ITNA	84CLE	01	
							2400	70		ITNA	82HAM	01	
							2400	200		ITNA	80GER	01	
							2400	200		ITNA	82SUZ	02	
600			ICPES	84NAD	01		2410	50		ITNA	85GAU	04	
940	190		ITNA	82SUZ	02		2420		34	WXRF	82MIL	01	
1000		34	AA	83BET	01		2700	50	D	TCGS	80AND	01	
1000	100	34	AA	83BET	01		2700	50	D	TCGS	80GER	01	
1000	200		ITNA	80GER	01		2700	50		TCGS	79FAI	01	
1013.04			ICPES	85PEA	01		2800		34	AA	83BET	01	
1300	200		ITNA	82HAM	01		3000	300	34	AA	83BET	01	
<u>Mg (ug/g)</u>													
15.7	0.8		ICPES	84NAD	01			<	1	L	WXRF	82MIL	01
19			ITNA	84CLE	01								
19	1.2		ITNA	82SUZ	02								
20.2	0.3		ITNA	86GLA	01								
20.4	1.5		ITNA	85GAU	04			<	1	L	WXRF	82MIL	01
20.8	2.1	34	FAA	83BET	01			<	1.6	12	ITNA	82SUZ	02
21.4			ESR	85SHI	01			<	1.8	12	ITNA	82SUZ	02
21.8	2.1		ITNA	82HAM	01			1.35	0.15		ITNA	84SUZ	02
22	3		ITNA	80GER	01			1.4	0.2		ITNA	80GER	01
22.1		34	FAA	83BET	01								
22.2	0.1	11	AA	82LIN	03								
22.3	0.8	11	AA	82LIN	03								
23		34	WXRF	82MIL	01			1.5	0.1	11	AA	82LIN	03
24	7	D	TCGS	80GER	01			1.72	0.32	12	ITNA	82SUZ	02
24	7	D	TCGS	80AND	01			1.78		34	FAA	83BET	01
24	7		TCGS	79FAI	01			1.8	0.5	34	FAA	83BET	01
345.6			ICPES	85PEA	01			1.83	0.23	12	ITNA	82SUZ	02
								2.2	0.2	11	AA	82LIN	03
								3		34	WXRF	82MIL	01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>O (%)</u>					<u>S-32/34 (ratio)</u>					
20.79	0.19	34	14NAA	80KHA 02	22.546					IDMS 84KEL 01
33	1.6		14NAA	80NAD 01						
34.99	0.32	35	14NAA	80KHA 02	<u>S-33/34 (ratio)</u>					
<u>P (ug/g)</u>					0.1778					IDMS 84KEL 01
60	9		ICPES	84NAD 01	<u>sb (ng/g)</u>					
63		34	WXRF	82MIL 01						
251	21		ICPES	85PEA 01						
<u>Pb (ug/g)</u>					< 200					ITNA 86GLA 01
					< 1000					WXRF 82MIL 01
					L					
					120					RTNA 78GAL 01
					130					ITNA 84CLE 01
1.48	0.21		HAA	82NAD 01	130					HAA 82NAD 01
1.8	0.1	11	AA	82LIN 03	140					ITNA 80GER 01
1.9	0.3	11	AA	82LIN 03	140					ITNA 82KAM 01
1.9	0.6	34	FAA	83BET 01	147					ITNA 85GAU 04
2		34	FAA	83BET 01	160					ITNA 82SUZ 02
2.6		34	WXRF	82MIL 01	170					ITNA 80TOU 01
<u>Pb-210 (pCi/g)</u>					200					HAA 82CRO 03
					200					HAA 82CRO 03
0.0699	0.0013	NM	80CAS 01		<u>Sc (ng/g)</u>					
0.07	0.001 D	NM	81CAS 01		< 1200					L ITNA 80TOU 01
<u>Pr (ug/g)</u>					560					ITNA 82SUZ 02
					610					ITNA 85GAU 04
<	1	L	WXRF	82MIL 01	610					ITNA 82HAM 01
<	4.3	12	ITNA	82SUZ 02	610					ITNA 86GLA 01
<	4.4	12	ITNA	82SUZ 02	690					ITNA 80GER 01
<u>Rb (ug/g)</u>					700					ITNA 80TOU 01
					900					34 WXRF 82MIL 01
<	0.3	L	WXRF	82MIL 01	<u>Se (ug/g)</u>					
0.76	0.09	12	ITNA	82SUZ 02	0.79					HAA 82NAD 01
0.83	0.08	12	ITNA	82SUZ 02	0.8					RTNA 80KNA 01
0.95	0.37		ITNA	85GAU 04	0.82					RTNA 78GAL 01
<u>S (ug/g)</u>					0.9					AF 82WIL 01
					0.9					FAA 82WIL 01
2880	40		ICPES	85PEA 01	0.93					HAA 84IMA 01
3200	100	D	TCGS	80AND 01	0.93					HAA 84IMA 03
3200	100	D	TCGS	80GER 01	0.94					ITNA 82SUZ 02
3200	100		TCGS	79FAI 01	0.97					ITNA 84SUZ 02
3280	90		CB	85GLA 03	0.98					ITNA 80GER 01
3300	100		IC	83NAD 01	0.99					ITNA 82SUZ 02
3470	60		CB	86GAU 01	1.0					ITNA 84CLE 01
3540	40		XRF	84WEB 01	1.0					HAA 85LIN 01
3540	140		IDMS	84KEL 01	1.0					HAA 85LIN 02
3640	50		CB	84GLA 11	1.1					RTNA 84DEL 01
					1.2					WXRF 82MIL 01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Si (ug/g)</u>										
5200	200		TCGS	79FAI 01		<	290	L	ITNA	82SUZ 02
5200	200	D	TCGS	80AND 01		<	360		ITNA	84SUZ 02
5200	200	D	TCGS	80GER 01		<	600	34	WXRF	82MIL 01
5600	700		14NAA	80GER 01						
6000	1000	34	AA	83BET 01						
6200		34	AA	83BET 01						
6500	600		ICPES	84NAD 01		560	30		ITNA	84SUZ 02
7600	22		ICPES	85PEA 01		580	40	12	ITNA	82SUZ 02
						610	70	12	ITNA	82SUZ 02
<u>Sm (ng/g)</u>										
250	10	D	TCGS	80GER 01		630	25		ITNA	85GAU 04
250	10	D	TCGS	80AND 01		630	60		ITNA	86GLA 01
250	10		TCGS	79FAI 01						
260	10		ITNA	85GAU 04						
260	20		ITNA	82HAM 01						
270	10	5	ITNA	80TOU 01						
300	40		ITNA	80GER 01		64.8	4.1		NM	80CAS 01
330	60		ITNA	84SUZ 02		64.8	4.1	D	NM	81CAS 01
340	30		ITNA	82SUZ 02						
<u>Sn (ug/g)</u>										
<	0.6	L	WXRF	82MIL 01		76.5	7.9		NM	80CAS 01
						76.5	7.9	D	NM	81CAS 01
<u>Sr (ug/g)</u>										
90	1		ICPES	84NAD 01		61.9	7.7		NM	81CAS 01
118	8	12	ITNA	82SUZ 02		61.9	7.7		NM	80CAS 01
127	24	12	ITNA	82SUZ 02						
129	14		ITNA	80GER 01						
140		34	WXRF	82MIL 01						
<u>Ta (ng/g)</u>										
<	300		ITNA	86GLA 01		124	2		ICPES	84NAD 01
<	1000	L	WXRF	82MIL 01		190	20	D	TCGS	80GER 01
44	6		ITNA	82SUZ 02		190	20	D	TCGS	80AND 01
45	9		ITNA	84SUZ 02		190	20		TCGS	79FAI 01
46	9		ITNA	80GER 01		200	20	34	COLOR	83BET 01
48	9		ITNA	85GAU 04		200	40		WXRF	82MIL 01
						201			ICPES	85PEA 01
						207			WXRF	83GAR 01
<u>Tb (ng/g)</u>										
<	100		ITNA	86GLA 01		210	20		ITNA	80GER 01
<	2000	L	WXRF	82MIL 01		210	50		ITNA	82SUZ 02
35	3		ITNA	82SUZ 02						
50	4		ITNA	84SUZ 02						
<u>Tl (ug/g)</u>										
						<	1	L	WXRF	82MIL 01
<u>Tm (ng/g)</u>										
						<	1000	L	WXRF	82MIL 01
						63	10		ITNA	84SUZ 02

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>U (ng/g)</u>									
200	50		ITNA	80GER 01	140	20		ITNA	80GER 01
220	20		ITNA	84SUZ 02	159	3		ITNA	85GAU 04
240	30		ITNA	82SUZ 02	170	60	5	ITNA	80TOU 01
250	10		DNA	86GLA 01	175	12		ITNA	82SUZ 02
320	40	5	ITNA	80TOU 01	179	16		ITNA	84SUZ 02
<u>U-234 (fCi/g)</u>									
71.9	4.4		NM	80CAS 01	4.2	1	34	FAA	83BET 01
71.9	4.4	D	NM	81CAS 01	4.9		34	FAA	83BET 01
<u>U-235 (fCi/g)</u>									
4.9	0.3	D	NM	81CAS 01	5	0.1	11	AA	82LIN 03
4.9	0.3		NM	80CAS 01	5	0.4	11	AA	82LIN 03
<u>U-238 (pCi/g)</u>									
0.0731	0.0046		NM	80CAS 01	5.4	0.76		ITNA	82HAM 01
0.0731	0.0046	D	NM	81CAS 01	5.6		34	WXRF	82MIL 01
<u>V (ug/g)</u>									
3.5	0.3	11	AA	82LIN 03	6.6		12	ITNA	82SUZ 02
4		34	WXRF	82MIL 01	7.5	1.4	12	ITNA	80GER 01
4.1			ITNA	84CLE 01	7.8	2.2		ITNA	80GER 01
4.3	0.2		ITNA	82HAM 01	18	1.2	12	ITNA	82SUZ 02
4.3	0.3		ITNA	82SUZ 02				ICPES	84NAD 01
4.5	0.05		ITNA	80GER 01					
4.7	0.3		ITNA	85GAU 04					
5	2		ITNA	86GLA 01					
5.4		34	FAA	83BET 01					
5.4	0.5	34	FAA	83BET 01					
6.7	0.1	11	AA	82LIN 03					
7.2	0.1	11	AA	82LIN 03					
<u>W (ng/g)</u>									
<	900		ITNA	86GLA 01					
<	1000	L	WXRF	82MIL 01					
173	51		ITNA	82SUZ 02					
210	50		ITNA	84SUZ 02					
<u>Y (ug/g)</u>									
1.9		34	WXRF	82MIL 01					

TABLE 1641-1: COMPILED DATA FOR NBS SRM 1641 MERCURY IN WATER  
(revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS Mean (n)	METHOD
		Mean	± SD		
Hg	ug/mL	1.49	± 0.05	1.47 (1)	AA

TABLE 1641-2: INDIVIDUAL DATA FOR NBS SRM 1641 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Hg (mg/L)</u>				
1.47	0.17	CVAA	82GLA 02	

TABLE 1641A-1: COMPILED DATA FOR NBS SRM 1641A MERCURY IN WATER  
(revised 3/1/86)

ELE	UNITS	NBS	
		Mean	± SD
Hg	ug/mL	1.1	± 0.05

TABLE 1641B-1: COMPILED DATA FOR NBS SRM 1641B MERCURY IN WATER  
(revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS Mean (n)	METHOD
		Mean	± SD		
Hg	ug/mL	1.52	± 0.04	1.52 (1)	NAA

TABLE 1641B-2: INDIVIDUAL DATA FOR NBS SRM 1641B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Hg (ug/g)</u>				
1.52	0.05	RTNA	85FEN 01	

TABLE 1642-1: COMPILED DATA FOR NBS SRM 1642 MERCURY IN WATER  
(revised 3/1/86)

ELE	UNITS	NBS	
		Mean	± SD
Hg	ng/mL	1.18	± 0.05

TABLE 1642A-1: COMPILED DATA FOR NBS SRM 1642A MERCURY IN WATER  
(revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD
		Mean	± SD	Mean	± SD			
Hg	ng/mL	1.1	± 0.06	1.22	± 0.07	(4)	1.19	1.14 - 1.30

TABLE 1642A-2: INDIVIDUAL DATA FOR NBS SRM 1642A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Hg (ug/L)</u>				
1.14	0.05		CVAA	85GAU 04
1.19	0.02		CVAA	81KAH 01
1.24			CVAA	84GLA 11
1.30			CVAA	82GLA 02

TABLE 1642B-1: COMPILED DATA FOR NBS SRM 1642B MERCURY IN WATER  
(revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS		RANGE	METHOD
		Mean	± SD	Mean	(n)		
Hg	ng/mL	1.49	± 0.06	1.46	(2)	1.45 - 1.48	AA

TABLE 1642B-2: INDIVIDUAL DATA FOR NBS SRM 1642B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Hg (ug/L)</u>				
1.45	0.13		CVAA	86GAU 01
1.48	0.06		CVAA	85GAU 04

TABLE 1643-1: COMPILED DATA FOR NBS SRM 1643 TRACE ELEMENTS IN WATER (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN		RANGE		AA		ICPES		OTHER METHODS		Mean (n)	Method	
			Mean	± SD	Mean ± SD (n)		Mean ± SD (n)		Mean ± SD (n)		Mean (n)		Mean (n)				
Al	ng/g	77 ± 1	78 ± 6	(6)	77.1	69 - 83	79 ± 7	(3)	69	(1)	77.1	(1)	AE-AF	83	(1)	DCPES	
As	ng/g	76 ± 1	75 ± 3	(5)	75.7	71 - 79	75.7	(1)	72	(2)	78.5	(2)	ASV	---	---	---	
Au	ng/g	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Ba	ng/g	18	18.9 ± 1.5	(6)	18	17.3 - 21.5	19.0 ± 1.7	(4)	---	---	18.5	(2)	AE-AF	---	---	---	
Be	ng/g	19 ± 1	20	(2)	---	18.8 - 21.3	18.8	(1)	---	---	21.3	(1)	AE-AF	---	---	---	
Ca	ug/g	27	23.9	(1)	---	---	---	---	---	---	23.9	(1)	NAA	---	---	---	
Cd	ng/g	8 ± 1	9.5 ± 2.4	(5)	9	7.1 - 12	8.9 ± 2.7	(3)	---	---	9	(1)	XRF	12	(1)	FE	
Co	ng/g	17 ± 1	20 ± 2	(8)	20	16 - 23	18.4 ± 1.7	(5)	22	(1)	21.5	(2)	XRF	---	---	---	
Cr	ng/g	15 ± 1	17.3 ± 1.8	(6)	16	16 - 20	17.6 ± 1.8	(5)	16	(1)	---	---	---	---	---	---	
Cu	ng/g	16 ± 1	15.7 ± 0.9	(9)	16	14 - 17	15.3 ± 0.8	(6)	19	(1)	16.5	(2)	XRF	16.2	(1)	AE-AF	
Fe	ng/g	75 ± 1	78 ± 3	(10)	78	72 - 82	76 ± 3	(5)	81	(1)	82	(2)	XRF	76	(1)	DCPES	
Fe	ng/g	---	---	---	---	---	---	---	---	---	78	(1)	FAF	---	---	---	
Hg	ng/g	2	< 8	---	---	---	---	---	---	---	< 8	---	XRF	---	---	---	
K	ug/g	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Mg	ug/g	7	5.7	(1)	---	---	---	---	---	---	5.7	(1)	NAA	---	---	---	
Mn	ng/g	29 ± 1	31 ± 4	(15)	29	25 - 39	29 ± 3	(8)	30	(1)	26	(1)	XRF	20	(1)	NAA	
Mn	ng/g	---	---	---	---	---	---	---	---	---	35.5	(2)	FE	---	---	---	
Mn	ng/g	---	---	---	---	---	---	---	---	---	29	(1)	DCPES	28	(1)	AE-AF	
Mo	ng/g	105 ± 3	105 ± 8	(8)	104	93 - 118	106 ± 8	(6)	93	(1)	110	(1)	AE-AF	---	---	---	
Na	ug/g	10	8.8	(1)	---	---	---	---	---	---	8.8	(1)	NAA	---	---	---	
Ni	ng/g	49 ± 1	49 ± 2	(12)	50	44 - 52	48 ± 3	(7)	48	(1)	53	(2)	XRF	48	(1)	DCPES	
Pb	ng/g	20 ± 1	22 ± 4	(4)	21	18 - 27	19.5	(2)	---	---	51.3	(1)	AE-AF	50	(1)	FE	
Se	ng/g	12 ± 1	11.2 ± 1.0	(3)	11.6	10 - 12	12	(1)	10	(2)	25	(2)	XRF	---	---	---	
Sn	ng/g	---	< 20	---	---	---	---	---	---	---	< 20	---	XRF	---	---	---	
Sr	ng/g	212 ± 4	203	(1)	---	---	---	---	203	(1)	---	---	---	---	---	---	
V	ng/g	50 ± 1	48 ± 6	(7)	50	40 - 55	50 ± 5	(5)	40	(1)	NAA	50	(1)	DCPES	61	(1)	DCPES
Zn	ng/g	65 ± 3	62 ± 4	(9)	62	55 - 69	62 ± 5	(5)	67	(1)	62	(2)	XRF	61	(1)	DCPES	

TABLE 1643-2: INDIVIDUAL DATA FOR NBS SRM 1643 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Al (ng/g)</u>					<u>Co (ng/g)</u>				
50			ITNA	81HAB 01	16	3	14	FAA	84HAR 01
69	3		ICPES	85FLO 01	18	3	14	FAA	84HAR 01
71	8		FAA	84HAR 02	18	6	14	FAA	84HAR 01
77.1	5.7		AE-AF	78EPS 01	20	2		XRF	80BER 02
82.1	1.4		FAA	78EPS 01	20	5		FAA	84HAR 02
83			FAA	84SLA 02	20	5	14	FAA	84HAR 01
83	2	D	DCPES	81REE 01	22	2		ICPES	85FLO 01
83	2		DCPES	79REE 01	23	2		EXRF	84KNA 01
<u>As (ng/g)</u>					<u>Cr (ng/g)</u>				
71			ICPES	82NYG 01	16	1		ICPES	85FLO 01
73	1		ICPES	83PRU 01	16	2	14	FAA	84HAR 01
75.7	1.3		HAA	80YAN 01	16	2	14	FAA	84HAR 01
78		13	ASV	82LEU 01	17	2	14	FAA	84HAR 01
79		13	ASV	82LEU 01	19	5	14	FAA	84HAR 01
					20	5		FAA	84HAR 02
<u>Ba (ng/g)</u>					<u>Cu (ng/g)</u>				
17.3	1.8		AE-AF	79EPS 03	14	0.3		FAA	78EPS 01
18		14	FAA	79EPS 03	15	1		FAA	84HAR 02
18			FAA	78BEA 01	15	2	14	FAA	84HAR 01
18.7	0.7		FAA	78EPS 01	16	2	14	FAA	84HAR 01
19.7	1		AE-AF	78EPS 01	16	2	14	FAA	84HAR 01
21.5	1.2	14	FAA	79EPS 03	16	2	14	FAA	84HAR 01
42	1		ICPES	85FLO 01	16	2	14	FAA	84HAR 01
					16	3		EXRF	84KNA 01
<u>Be (ng/g)</u>					16.2	1.8		AE-AF	78EPS 01
18.8	0.4		FAA	78EPS 01	17	1		XRF	80BER 02
21.3	5.5		AE-AF	78EPS 01	19	1		ICPES	85FLO 01
<u>Ca (ug/g)</u>					<u>Fe (ng/g)</u>				
23.9			ITNA	81HAB 01	72	3	14	FAA	84HAR 01
					74	3	14	FAA	84HAR 01
<u>Cd (ng/g)</u>					76	2	D	DCPES	81REE 01
7.1		13	FAA	84SLA 02	76	2		DCPES	79REE 01
7.5		13	FAA	84SLA 02	77	7		FAA	84HAR 02
9	1		EXRF	84KNA 01	78	3	14	FAA	84HAR 01
12	2		FE	82JEN 05	78	5	14	FAA	84HAR 01
12	2		FAA	82JEN 05	81	6		ICPES	85FLO 01
					82	3		XRF	80BER 02
					82	5		EXRF	84KNA 01
<u>Hg (ng/g)</u>					<	8	L	XRF	80BER 02

TABLE 1643-2: INDIVIDUAL DATA FOR NBS SRM 1643 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference					
<u>Mg (ug/g)</u>														
5.7			ITNA	81HAB 01	18			FAA	84SLA 02					
<u>Mn (ng/g)</u>														
20			ITNA	81HAB 01	21	7		FAA	84HAR 02					
25			FAA	84SLA 02	23	2		XRF	80BER 02					
26	3		XRF	80BER 02	27	9		EXRF	84KNA 01					
27.5	0.7		FAA	78EPS 01	<u>Pb (ng/g)</u>									
28	2	14	FAA	84HAR 01	10			ICPES	82NYG 01					
28	2.5		AE-AF	78EPS 01	11.6	0.3		ICPES	83PRU 01					
29	3		DCPES	79REE 01	12	1		HAA	81COX 01					
29	3	D	DCPES	81REE 01	<u>Se (ng/g)</u>									
29	7	14	FAA	84HAR 01	<u>Sn (ng/g)</u>									
30	1		ICPES	85FLO 01	<	20	L	XRF	80BER 02					
30	5	14	FAA	84HAR 01	<u>Sr (ng/g)</u>									
31	2		FAA	84HAR 02	203	16		ICPES	85FLO 01					
31	2	14	FAA	84HAR 01	<u>V (ng/g)</u>									
34	1		FAA	82JEN 05	40			ITNA	81HAB 01					
35	1		FE	82JEN 05	41	15		FAA	84HAR 02					
36	1		FE	82JEN 05	50	2	D	DCPES	81REE 01					
39	1		FAA	82JEN 05	50	2		DCPES	79REE 01					
<u>Mo (ng/g)</u>														
93	4		ICPES	85FLO 01	50	7	14	FAA	84HAR 01					
95	17	14	FAA	84HAR 01	51	7	14	FAA	84HAR 01					
102	18	14	FAA	84HAR 01	52	7	14	FAA	84HAR 01					
104	3		FAA	78EPS 01	55	6	14	FAA	84HAR 01					
105	27		FAA	84HAR 02	<u>Zn (ng/g)</u>									
110	5		AE-AF	78EPS 01	55	7	14	FAA	84HAR 01					
113	18	14	FAA	84HAR 01	61	1	D	DCPES	81REE 01					
118	25	14	FAA	84HAR 01	61	12	14	DCPES	79REE 01					
<u>Na (ug/g)</u>														
8.8			ITNA	81HAB 01	61	1		FAA	84HAR 01					
<u>Ni (ng/g)</u>														
44	5	14	FAA	84HAR 01	61	17		EXRF	84KNA 01					
45	4		FAA	82JEN 05	62	5	14	FAA	84HAR 01					
48	3		ICPES	85FLO 01	62	7	14	FAA	84HAR 01					
48	4	D	DCPES	81REE 01	63	3		XRF	80BER 02					
48	4		DCPES	79REE 01	67	3		ICPES	85FLO 01					
48	14		FAA	84HAR 02	69	12		FAA	84HAR 02					
49.8	0.8		FAA	78EPS 01										
50	3		FE	82JEN 05										
50	3		XRF	80BER 02										
50	5	14	FAA	84HAR 01										
51	3	14	FAA	84HAR 01										
51.3	4.2		AE-AF	78EPS 01										
52	6	14	FAA	84HAR 01										
56	2		EXRF	84KNA 01										

TABLE 1643A-1: COMPILED DATA FOR NBS SRM 1643A TRACE ELEMENTS IN WATER (revised 3/1/86)

ELEMENT UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		ICPES		OTHER METHODS	
		Mean ± SD	Mean ± SD (n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n) Method
Ag ng/g	2.8 ± 0.3	3.3 ± 0.4 (9)	3.5	2.7 - 3.9	121 - 129	3.1 ± 0.5 (5)	3.4 (1)	3.6 ± 0.2 (3)	129 (1) ICPMS	---	---
Al ng/g	---	125 (2)	---	70 - 80	75 ± 4 (6)	74.5 (2)	74 (1)	129 (1) NAA	78 (2) NAA	---	---
As ng/g	76 ± 7	75 ± 3 (11)	75.1	---	---	15 (1)	15 (1)	74 (1) ICPMS	78 (2) ICPMS	---	---
Au ng/g	15	15 (1)	---	41 - 54	47 ± 2 (4)	46 (1)	47 ± 6 (3)	47 ± 6 (3) ICPMS	47 ± 6 (3) ICPMS	---	---
Ba ng/g	46 ± 2	47 ± 4 (8)	45.7	18.6 - 24	19 (5)	18.9 ± 0.2 (4)	24 (1)	24 (1) ICPMS	24 (1) ICPMS	---	---
Be ng/g	19 ± 2	20 ± 2 (5)	19	26.5 - 28	28.0 ± 1.4 (4)	27.3 ± 0.7 (4)	---	27.3 ± 0.7 (4) ICPMS	27.3 ± 0.7 (4) ICPMS	---	---
Ca ug/g	27	27.3 ± 0.5 (7)	27.4	8.4 - 13	11.0 ± 1.5 (8)	10.8 ± 1.0 (6)	9.8 ± 0.4 (3)	9.8 ± 0.4 (3) NAA	9.8 ± 0.4 (3) NAA	10.1 (1) AAC	10.1 (1) AAC
Cd ng/g	10 ± 1	10.7 ± 1.2 (22)	10.6	---	---	---	---	11.3 ± 1.5 (3)	11.3 ± 1.5 (3) ICPMS	---	---
Cd ng/g	---	---	---	---	---	---	---	10.6 (1)	10.6 (1) AAC	---	---
Cl ng/g	---	< 300	---	20	18.3 - 22	21.2 ± 0.8 (5)	21 ± 2 (5)	19 ± 0.5 (4)	19 ± 0.5 (4) NAA	---	---
Co ng/g	19 ± 2	20.1 ± 1.3 (13)	20	16 - 20	18.2 ± 1.4 (11)	18 ± 2 (6)	17.8 ± 1.8 (3)	17.8 ± 1.8 (3) XRF	17.8 ± 1.8 (3) XRF	17.5 (2) ICPMS	17.5 (2) ICPMS
Cr ng/g	17 ± 2	17.9 ± 1.4 (24)	17.6	---	---	---	---	16.2 ± 0.3 (3)	16.2 ± 0.3 (3) NAA	---	---
Cr(III) ng/g	---	---	14.9 (1)	---	---	---	14.9 (1)	---	14.9 (1)	---	---
Cr(VI) ng/g	---	1.96 (1)	---	---	---	1.96 (1)	---	< 300 (1)	< 300 (1) NAA	---	---
Cu ng/g	18 ± 2	18.3 ± 1.4 (23)	18	15.5 - 21	17.4 ± 1.1 (12)	19.1 ± 1.1 (6)	19 ± 0.2 (4)	19 ± 0.2 (4) NAA	19 ± 0.2 (4) NAA	---	---
Fe ng/g	88 ± 4	87 ± 5 (18)	87	78 - 100	86 ± 6 (11)	87 ± 4 (5)	88 (2)	88 (2) NAA	88 (2) NAA	21 (1) ICPMS	21 (1) ICPMS
Hg ng/g	< 0.2	0.2 (1)	---	---	---	---	0.2 (1)	0.2 (1) ICPMS	0.2 (1) ICPMS	---	---
K ug/g	2	1.7 ± 0.2 (5)	1.7	1.5 - 2.1	1.65 ± 0.16 (3)	1.9 (2)	---	7.0 (1)	7.0 (1) ICPMS	---	---
Li ng/g	---	7 (1)	---	---	---	---	---	---	---	---	---
Mg ug/g	8	7.80 ± 0.06 (7)	7.8	7.7 - 7.9	7.80 ± 0.08 (4)	8.1 ± 0.6 (4)	---	8.1 ± 0.6 (4) NAA	8.1 ± 0.6 (4) NAA	---	---
Mn ng/g	31 ± 2	31.6 ± 1.4 (18)	32	28 - 34	32.1 ± 1.2 (9)	31 ± 2 (6)	29 ± 4 (4)	29 ± 4 (4) NAA	29 ± 4 (4) NAA	---	---
Mo ng/g	95 ± 6	100 ± 4 (14)	97	94 - 108	98 ± 5 (5)	100 ± 5 (4)	100 ± 3 (4)	100 ± 3 (4) NAA	100 ± 3 (4) NAA	108 (1) ICPMS	108 (1) ICPMS
NO3 ug/g	---	1.0 (1)	---	---	---	---	---	1.0 (1) ISE	1.0 (1) ISE	---	---
Na ug/g	9	9.3 ± 0.4 (6)	9.2	8.9 - 10	9.1 ± 0.3 (4)	10.4 ± 1.4 (3)	---	10.4 ± 1.4 (3) NAA	10.4 ± 1.4 (3) NAA	---	---
Ni ng/g	55 ± 3	54 ± 4 (19)	55	47 - 62	54 ± 2 (8)	55 ± 6 (6)	51.5 (2)	51.5 (2) AAC	51.5 (2) AAC	56 (2) NAA	56 (2) NAA
Pb ng/g	27 ± 1	27.3 ± 1.5 (15)	27	24.1 - 30	27.5 ± 0.9 (8)	26 (2)	27.4 (1)	27.4 (1) AAC	27.4 (1) AAC	---	---
Pb ng/g	---	---	---	---	---	---	---	28.3 (2)	28.3 (2) ICPMS	---	---
Pb ng/g	---	---	---	---	---	---	---	26.1 (2)	26.1 (2) FAAC	---	---
Se ng/g	11 ± 1	11.2 ± 0.8 (6)	11	10 - 12	11.1 ± 0.7 (5)	---	12 (1)	12 (1) ICPMS	12 (1) ICPMS	---	---
Sr ng/g	239 ± 5	227 ± 16 (9)	232	200 - 246	236 (1)	239 ± 6 (4)	213 ± 12 (4)	< 0.01 (4) NAA	< 0.01 (4) NAA	---	---
U ng/g	---	< 0.01	---	---	---	---	---	---	---	---	---
V ng/g	53 ± 3	53 ± 2 (13)	52	50 - 56	54.2 ± 1.7 (4)	52.0 ± 1.8 (4)	51.8 ± 1.2 (4)	51.8 ± 1.2 (4) NAA	51.8 ± 1.2 (4) NAA	50 (2) ICPMS	50 (2) ICPMS
Zn ng/g	72 ± 4	68 ± 6 (23)	68	57 - 77	66 ± 6 (11)	68 ± 4 (6)	69.5 ± 2.6 (3)	69.5 ± 2.6 (3) NAA	69.5 ± 2.6 (3) NAA	69 ± 3 (3) ICPMS	69 ± 3 (3) ICPMS

TABLE 1643A-2: INDIVIDUAL DATA FOR NBS SRM 1643A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>					<u>Be (ng/g)</u>				
2.7			FAA	82GLA 02	18.6	1		ICPES	82DEM 01
2.8	0.1		FAA	84GLA 02	19	0.4		ICPES	85HEE 01
2.8	0.4		FAA	85GAU 04	19	1	11	ICPES	85NIS 01
3.4	0.5		ICPES	82DEM 01	19	1	11	ICPES	85NIS 01
3.5			ICPMS	85DAT 01	24			ICPMS	85DAT 01
3.5	1	6	ICPMS	83DOU 01					
3.6	1.1		FAA	84GLA 11					
3.8	0.4		FAA	83JEN 01					
3.9	1	6	ICPMS	83DOU 01	26.5	0.5	11	ICPES	85NIS 01
					26.9	0.8		AA	84GLA 02
<u>Al (ng/g)</u>					27	0.5	11	ICPES	85NIS 01
57	6		FAA	82JEN 02	27.4			AA	84GLA 11
121	8		UU	83LIN 01	27.5	1.4		AA	85GAU 04
129	10		RTNA	83GRE 01	27.6	0.7		ICPES	85LAN 02
					28	1		ICPES	85HEE 01
					30	4		FAA	82GLA 02
<u>As (ng/g)</u>					<u>Cd (ng/g)</u>				
<	70		ICPES	85LAN 02					
70	4		FAA	84GLA 02	5	1		FAA	82JEN 02
71	5		FAA	84GLA 11	8.4	0.8		FAA	85BRE 01
72	62		ICPES	85KIM 01	9	1.4		ICPES	85KIM 01
74			ICPMS	85DAT 01	9.3	0.9		FAA	85GAU 04
74	3		HAA	81KAH 01	9.4	1		RTNA	84BEM 01
75.1	0.8		NAA	84FEN 01	9.8	1.7		NAA	84FEN 01
76	7		FAA	82GLA 02	10	2	6	ICPMS	83DOU 01
77	28		ICPES	85HEE 01	10.1	0.5		RTNA	83GRE 01
78	6		FAA	85GAU 04	10.1	0.8		FAAC	85GAU 04
79			FAA	84SLA 02	10.4	0.5		ICPES	82DEM 01
80	1		ITNA	83JER 01	10.6			AAC	86GAU 01
					10.6	0.2	11	FAA	85SUB 01
<u>Au (ng/g)</u>					11			ICPMS	85DAT 01
15	4		ICPES	85HEE 01	11	0.4		ICPES	85HEE 01
					11	1	11	ICPES	85NIS 01
<u>Ba (ng/g)</u>					11	2		FAA	84GLA 02
					11.4	2.9	11	FAA	85SUB 01
41	4	6	ICPMS	83DOU 01	12			FAA	82GLA 02
45	6		FAA	84GLA 02	12.2	1.6		ICPES	85LAN 02
45	10		AA	84GLA 11	12.5	0.3		FAA	83JEN 01
45.7			ICPMS	85DAT 01	12.5	1.3		FAA	83JER 01
46	1		ICPES	85HEE 01	13	2	6	ICPMS	83DOU 01
48	3		FAA	82GLA 02					
49	3		FAA	85GAU 04					
54	6	6	ICPMS	83DOU 01					
					< 300			ITNA	84GLA 11

TABLE 1643A-2: INDIVIDUAL DATA FOR NBS SRM 1643A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Co (ng/g)</u>						<u>Cr(VI) (ng/g)</u>				
18.3	1.4		NAA	84FEN 01		1.96	0.32		ICPES	85COX 01
18.5	1.8		ICPES	82DEM 01						
19	1		RTNA	83GRE 01						
19	1		RTNA	82GRE 03						
19.5	0.6		RTNA	84BEM 01		10	1		FAA	82JEN 02
20			FAA	84SLA 02		15.5	1.8		FAA	83JEN 01
20	2	11	ICPES	85NIS 01		16			FAA	82GLA 02
20	2	11	ICPES	85NIS 01		17			AA	84GLA 11
21	3	14	FAA	84HAR 01		17	1	14	FAA	84HAR 01
21	3	14	FAA	84HAR 01		17	2		FAA	83JER 01
21.5	2		ICPES	85LAN 02		17	2.6		FAA	85GAU 04
22	3	14	FAA	84HAR 01		17.1	3.8	11	FAA	85SUB 01
22	3	14	FAA	84HAR 01		18	1	11	ICPES	85NIS 01
24	4		ICPES	85HEE 01		18	2	14	FAA	84HAR 01
						18	2	14	FAA	84HAR 01
<u>Cr (ng/g)</u>						18	3		ICPES	85HEE 01
						18	3	14	FAA	84HAR 01
14.2	3.4		ICPES	85LAN 02		18.8	2.4		NAA	84FEN 01
16	2		RTNA	83GRE 01		19	1		FAA	84GLA 02
16	2		RTNA	82GRE 03		19	2	11	ICPES	85NIS 01
16	2	14	FAA	84HAR 01		19.1	0.6		RTNA	83GRE 01
16.2	1.5	D	CPXRF	84SIM 02		19.1	0.6		RTNA	82GRE 03
16.2	1.5	11	CPXRF	84SIM 01		19.2	2		RTNA	84BEM 01
16.4	3.1	11	FAA	85SUB 01		19.3	3.1		ICPES	85LAN 02
16.6	0.7		RTNA	84BEM 01		19.5	1.3		ICPES	82DEM 01
17	1	6	ICPMS	83DOU 01		19.5	3.2	11	FAA	85SUB 01
17	1	11	ICPES	85NIS 01		21	3	6	ICPMS	83DOU 01
17	1		ICPES	85HEE 01		21	10		ICPES	85KIM 01
17.4	2.2	11	CPXRF	84SIM 01		31	10	6	ICPMS	83DOU 01
17.4	2.2	D	CPXRF	84SIM 02		45		6	ICPMS	83DOU 01
17.5	0.3		FAA	84GLA 02						
17.6	0.9		FAA	85GAU 04						
						<u>Fe (ng/g)</u>				
18	1	11	ICPES	85NIS 01		23	5		FAA	82JEN 02
18	2	14	FAA	84HAR 01		78	9	14	FAA	84HAR 01
18	3		FAA	84GLA 11		80	8		FAA	83JER 01
18	4	6	ICPMS	83DOU 01		82	4		ICPES	85HEE 01
18.1	2.9	11	FAA	85SUB 01		83	6	14	FAA	84HAR 01
19	2	14	FAA	84HAR 01		84.5	1.8		ICPES	85LAN 02
19.8	5.6	11	CPXRF	84SIM 01		85	2		FAA	83JEN 01
20			FAA	82GLA 02		86	2		FAA	86GAU 01
20	2	14	FAA	84HAR 01		86	7	14	FAA	84HAR 01
20	2.5		ICPES	82DEM 01		87			FAA	84SLA 02
20	3		FAA	83JEN 01		88	2.5		ICPES	82DEM 01
20	4.2		ICPES	85KIM 01		88	7	14	FAA	84HAR 01
32		6	ICPMS	83DOU 01		88	7		FAA	84GLA 02
						88	16		RTNA	83GRE 01
						88	16		RTNA	82GRE 03
						90			FAA	84GLA 11
14.9	2.1		ICPES	85COX 01		90	5	11	ICPES	85NIS 01
						92	6	11	ICPES	85NIS 01
						100			FAA	82GLA 02

TABLE 1643A-2: INDIVIDUAL DATA FOR NBS SRM 1643A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Mg (ng/g)</u>						<u>Mo (ng/g)</u>				
<	4		ICPES	85HEE 01		94	16	14	FAA	84HAR 01
0.2			ICPMS	85DAT 01		95	9	14	FAA	84HAR 01
						95.6	3.1		ICPES	85LAN 02
<u>K (ug/g)</u>						97	6		FAA	84MOK 01
1.5			FAA	82GLA 02		97	6		RTNA	83GRE 01
1.62	0.04		AA	84GLA 02		97	8	11	ICPES	85NIS 01
1.7	0.3		ICPES	85HEE 01		98	12	14	FAA	84HAR 01
1.82			AA	85GAU 04		100	10	11	ICPES	85NIS 01
2.1	0.2	11	ICPES	85NIS 01		102	4		RTNA	84MOK 01
						103	4.5		NAA	84FEN 01
<u>Li (ng/g)</u>						106	5		ICPES	85HEE 01
7			ICPMS	85DAT 01		106	24	14	FAA	84HAR 01
						108			ICPMS	85DAT 01
<u>Mg (ug/g)</u>						<u>Na (ug/g)</u>				
2.1	0.3	11	ICPES	85NIS 01		8.9	0.4		AA	85GAU 04
7.7	0.23		AA	85GAU 04		9	0.2		AA	84GLA 02
7.8			AA	84GLA 11		9	0.2		FAA	82GLA 02
7.8	0.13		ICPES	85HEE 01		9.2	0.5	11	ICPES	85NIS 01
7.8	0.2	11	ICPES	85NIS 01		9.6			AA	84GLA 11
7.8	0.4		AA	84GLA 02		10	0.6	11	ICPES	85NIS 01
7.8	0.4	11	ICPES	85NIS 01		12	0.8		ICPES	85HEE 01
7.9	0.3		FAA	82GLA 02						
9	0.2		ICPES	85LAN 02		<u>Ni (ng/g)</u>				
<u>Mn (ng/g)</u>						31	3	6	ICPMS	83DOU 01
						47	3	6	ICPMS	83DOU 01
10	1		FAA	82JEN 02		47	4		FAA	83JEN 01
24	2.5		ITNA	83JER 01		47	10		ICPES	85HEE 01
28	2.4		ICPES	85KIM 01		50.4	6.3		ICPES	85LAN 02
30	2	11	ICPES	85NIS 01		51	8	14	FAA	84HAR 01
30	2	14	FAA	84HAR 01		52			FAA	85GAU 04
30.9	0.6		RTNA	83GRE 01		52	6	14	FAA	84HAR 01
30.9	0.6		RTNA	82GRE 03		54	5		FAA	83JER 01
31	3		FAA	83JEN 01		54	7	14	FAA	84HAR 01
31.3	0.8		ICPES	82DEM 01		55			FAA	84GLA 11
31.5	2		RTNA	84BEM 01		55	5	11	ICPES	85NIS 01
32			FAA	84GLA 11		55	7	14	FAA	84HAR 01
32	0.7		ICPES	85LAN 02		56		6	ICPMS	83DOU 01
32	2	14	FAA	84HAR 01		56	1.5		ICPES	82DEM 01
32	3	14	FAA	84HAR 01		56	8		RTNA	83GRE 01
32	3		FAA	84GLA 02		56	8		RTNA	82GRE 03
32.5	3.3		FAA	83JER 01		57			FAA	82GLA 02
33	1		ICPES	85HEE 01		60	3	11	ICPES	85NIS 01
33	1	11	ICPES	85NIS 01		62	18		ICPES	85KIM 01
33.5			FAA	85GAU 04						
34	6	14	FAA	84HAR 01						

TABLE 1643A-2: INDIVIDUAL DATA FOR NBS SRM 1643A (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>NO<sub>3</sub> (ug/g)</u>						<u>V (ng/g)</u>				
1			ISE	84GLA 02		44		6	ICPMS	83DOU 01
<u>Pb (ng/g)</u>						50	1		ICPES	85HEE 01
<	50		ICPES	85LAN 02		50	1.3		NAA	84FEN 01
22	5		ICPES	85HEE 01		51.1	4.8		ICPES	85LAN 02
24.1	0.8	11	FAA	85SUB 01		52	1		RTNA	83GRE 01
25.2			FAAC	86GAU 01		52	5	14	FAA	84HAR 01
26	2		FAA	82GLA 02		53	1		ITNA	83JER 01
26.8			FAA	86GAU 01		53	1	11	ICPES	85NIS 01
27	1		FAA	83JEN 01		54	1	11	ICPES	85NIS 01
27	2		FAA	85GAU 04		54	8	14	FAA	84HAR 01
27	3		FAAC	85GAU 04		55	10	14	FAA	84HAR 01
27.4			AAC	86GAU 01		56	5	6	ICPMS	83DOU 01
27.6			ICPMS	85DAT 01		56	9	14	FAA	84HAR 01
28	2		FAA	84GLA 02		71	12	6	ICPMS	83DOU 01
28	2		FAA	84GLA 11						
28	3		FAA	83JER 01		<u>Zn (ng/g)</u>				
28.9	9.1	11	FAA	85SUB 01		21		6	ICPMS	83DOU 01
29	2		ICPMS	83DOU 02		57	6		FAA	82JEN 02
30	38		ICPES	85KIM 01		58	9	14	FAA	84HAR 01
41	5		FAA	82JEN 02		60	7	6	ICPMS	83DOU 01
						61	4.2		ICPES	85KIM 01
<u>Se (ng/g)</u>						62	16	14	FAA	84HAR 01
<	40		ICPES	85HEE 01		63			FAA	85GAU 04
10	1		FAA	84GLA 02		65	2		AA	84GLA 11
11			FAA	84GLA 11		65.1	0.3		FAA	83JEN 01
11			FAA	84SLA 02		66	2		FAA	84GLA 02
11.5	0.5		HAA	81KAH 01		68	1		ICPES	85HEE 01
12			ICPMS	85DAT 01		68	5		RTNA	82GRE 03
12	0.8		FAA	85GAU 04		68	5		RTNA	83GRE 01
35	40		ICPES	85KIM 01		69.7	2.4		ICPES	85LAN 02
						70	5	11	ICPES	85NIS 01
						70	5	11	ICPES	85NIS 01
<u>Sr (ng/g)</u>						70	7		FAA	83JER 01
						70	11	6	ICPMS	83DOU 01
200		6	ICPMS	83DOU 01		70	12	14	FAA	84HAR 01
206	50	6	ICPMS	83DOU 01		70.2	0.6		ICPES	82DEM 01
220			ICPMS	85DAT 01		72.5	2		RTNA	84BEM 01
225	32	6	ICPMS	83DOU 01		76			FAA	82GLA 02
232	5	11	ICPES	85NIS 01		77	3	6	ICPMS	83DOU 01
236			FAA	84GLA 02		77	7	14	FAA	84HAR 01
239	5	11	ICPES	85NIS 01						
240	2.5		ICPES	82DEM 01						
246	6		ICPES	85HEE 01						
<u>U (ng/g)</u>										
<	0.01		RTNA	84BEM 01						

TABLE 1643B-1: COMPILED DATA FOR NBS SRM 1643B TRACE ELEMENTS IN WATER (revised 3/1/86)

ELE	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	AA		OTHER METHODS	
		Mean	± SD	Mean	± SD (n)			Mean ± SD (n)	Method	Mean (n)	
Ag	ng/g	9.8	± 0.8	10.6	(1)	---	---	10.6	(1)	---	
As	ng/g	49		50	(2)	---	46 - 54	50	(2)	---	
B	ng/g	94		---		---	---	---		---	
Ba	ng/g	44	± 2	42	(2)	---	41 - 43	42	(2)	---	
Be	ng/g	19	± 2	---		---	---	---		---	
Bi	ng/g	11		---		---	---	---		---	
Ca	ug/g	35		33	(2)	---	31 - 35	35	(1)	31	(1) TITR
Cd	ng/g	20	± 1	20.0	± 1.2 (4)	19.4	18.8 - 21.7	19.7	(2)	18.8	(1) AAC
Cd	ng/g	---		---		---	---	---		21.7	(1) FAAC
Co	ng/g	26	± 1	---		---	---	---		---	
Cr	ng/g	18.6	± 0.4	18.4	(2)	---	17.6 - 19.2	18.4	(2)	---	
Cu	ng/g	21.9	± 0.4	21.7	(2)	---	19.4 - 24	21.7	(2)	---	
Fe	ng/g	99	± 8	98.4	(2)	---	97.7 - 99.2	97.7	(1)	99.2	(1) IDMS
K	ug/g	3		---		---	---	---		---	
Mg	ug/g	15		---		---	---	---		---	
Mn	ng/g	28	± 2	26.7	± 1.6 (3)	27.2	25 - 28	26.7	± 1.6 (3)	---	
Mo	ng/g	85	± 3	---		---	---	---		---	
Na	ug/g	8		---		---	---	---		---	
Ni	ng/g	49	± 3	69	(1)	---	---	69	(1)	---	02
Pb	ng/g	23.7	± 0.7	24	± 3 (4)	22	21 - 27	25.8	(2)	21	(1) AAC
Pb	ng/g	---		---		---	---	---		22	(1) FAAC
Se	ng/g	9.7	± 0.5	9.1	(2)	---	9 - 9.2	9.1	(2)	---	
Sr	ng/g	227	± 6	---		---	---	---		---	
Tl	ng/g	8.0	± 0.2	---		---	---	---		---	
V	ng/g	45.2	± 0.4	---		---	---	---		---	
Zn	ng/g	66	± 2	68.2	(2)	---	66 - 70.5	68.2	(2)	---	

TABLE 1643B-2: INDIVIDUAL DATA FOR NBS SRM 1643B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>										
10.6	1.1		FAA	86GAU 01		97.7	6.4		FAA	86GAU 01
<u>As (ng/g)</u>										
46	16		FAA	86GAU 01		99.2	2.5		IDMS	84FAS 01
54	5		FAA	85GAU 04						
<u>Ba (ng/g)</u>										
41	4		FAA	86GAU 01						
43			FAA	85GAU 04						
<u>Ca (ug/g)</u>										
31	2		TITR	85GAU 04						
35			AA	85GAU 04						
<u>Cd (ng/g)</u>										
18.8			AAC	86GAU 01						
19.4	0.6		FAA	86GAU 01						
20			FAA	85GAU 04						
21.7			FAAC	86GAU 01						
<u>Cr (ng/g)</u>										
17.6	1.1		FAA	86GAU 01						
19.2	1.8		FAA	85GAU 04						
<u>Cu (ng/g)</u>										
19.4	1.5		AA	86GAU 01						
24	8		FAA	85GAU 04						
<u>Fe (ng/g)</u>										
<u>Mn (ng/g)</u>										
<u>Ni (ng/g)</u>										
<u>Pb (ng/g)</u>										
<u>Se (ng/g)</u>										
<u>Zn (ng/g)</u>										

TABLE 1645-1: COMPILED DATA FOR NBS SRM 1645 RIVER SEDIMENT (revised 3/1/86)

ELE	UNITS	NBS Mean ± SD	CONSENSUS		MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS Mean ± SD (n) Method
			Mean ± SD	(n)							
A9	ug/g	---	1.75 (1)	---	---	---	---	---	---	---	1.75 (1) IDMS
Al	%	2.26 ± 0.04	2.20 ± 0.25 (9)	2.14 (19)	1.4 - 2.54	2.42 (1)	2.45 (2)	1.9 ± 0.6 (5)	1.90 (2)	1.4 (2)	1.4 (1) DCPES
As	ug/g	66	67 ± 3	66	62.6 - 75	66.0 ± 1.6 (6)	67 ± 4 (4)	66 ± 3 (6)	85 (2)	87 (2)	87 (1) PAA
As	ug/g	---	---	---	---	---	---	---	---	71.3 (1)	DCPES
As	ug/g	---	---	---	---	---	---	---	---	4.7 (1)	AF
As	ug/g	---	---	---	---	---	---	---	---	65 (1)	FAE
B	ug/g	---	31 (1)	---	---	---	---	---	---	31 (1)	TCGS
Ba	ug/g	---	374 ± 26 (4)	370 (1)	340 - 400	---	340 (1)	385 ± 15 (3)	---	---	---
Be	ug/g	---	1.0 (1)	---	---	---	---	1.0 (1)	---	---	---
Bi	ng/g	---	600 (1)	---	---	---	---	---	---	600 (1)	AF
CoO	g/kg	149.4 ± 9	---	---	2.62	2.00 - 3.11	2.6 (2)	2.73 (1)	2.5 ± 0.3 (7)	2.8 ± 0.4 (3)	2.93 (1) PAA
Ca	%	2.9	2.65 ± 0.34 (14)	2.62	8.9 - 11.4	9.6 ± 0.8 (10)	9.55 (2)	10.2 ± 1.0 (9)	---	---	11 (1) PAA
Cd	ug/g	10.2 ± 1.5	10.0 ± 0.7 (25)	10	---	---	---	---	---	9.1 (1)	IDMS
Cd	ug/g	---	---	---	---	---	---	---	---	10.3 ± 0.2 (3)	AF
Cd	ug/g	---	---	---	---	---	---	---	---	11.4 (1)	AE-AF
Ce	ug/g	---	24 (2)	20 - 28	---	---	---	---	---	24 (2)	PAA
Co	ug/g	10.1 ± 0.6	9.4 ± 1.9 (10)	8.5	6.7 - 12.8	6.95 (2)	8.8 ± 1.0 (3)	11.2 ± 1.1 (6)	---	8.5 (1)	PAA
Co-60	pCi/g	---	< 0.06	---	---	---	---	---	---	< 0.06	GAMMA
Cr	%	2.96 ± 0.28	2.93 ± 0.31 (30)	2.91	2.1 - 3.52	2.92 ± 0.18 (5)	3.17 ± 0.15 (7)	2.6 ± 0.4 (13)	3.16 ± 0.36 (4)	2.64 (2)	PAA
Cr	%	---	---	---	---	---	---	---	---	2.1 (1)	DCPES
Cs	ug/g	---	2.8 ± 0.5 (3)	2.69	2.32 - 3.3	---	2.8 ± 0.5 (3)	---	---	---	---
Cs-137	pCi/g	---	< 0.05	---	---	---	---	---	---	< 0.05	GAMMA
Cu	ug/g	109 ± 19	108 ± 11 (30)	108	84 - 128	109 ± 12 (7)	124 (2)	108 ± 8 (10)	107 ± 21 (4)	106 (1)	PAA
Cu	ug/g	---	---	---	---	---	---	---	---	104 (2)	ASV
Cu	ug/g	---	---	---	---	---	---	---	---	102 (1)	DCPES
DY	ug/g	---	2.0 (1)	---	---	---	---	---	---	2.0 (1)	DCPES
Eu	ug/g	0.50 (2)	0.31 - 0.70	---	0.31 (2)	0.31 (2)	0.31 (1)	0.7 (1)	---	---	---
F	ug/g	1540 (2)	1336 - 1740	---	---	---	---	---	---	1538 (2)	ISE
Fe	%	11.3 ± 1.2	10.2 ± 1.3 (26)	10.4	7.7 - 12.9	10.8 ± 0.9 (4)	9.5 (2)	10.2 ± 1.4 (13)	10.4 ± 1.5 (5)	10.51 (1)	PAA
Fe	%	---	---	---	---	---	---	---	---	7.9 (1)	DCPES

TABLE 1645-1: COMPILED DATA FOR NBS SRM 1645 RIVER SEDIMENT (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS Mean ± SD (n) Method
						Mean ± SD (n)	SD (n)	Mean ± SD (n)	SD (n)	Mean ± SD (n)	SD (n)	Mean ± SD (n)	SD (n)	
Ga	ug/g	---	4.1 ± 2.3 (4)	38	14 - 71	---	---	---	---	38	(1)	55.5	(2)	14 (1) DC/PES
Gd	ug/g	---	1.06 (2)	---	0.96 - 1.16	---	---	---	---	---	---	---	---	1.06 (2) TC/GS
Hf	ug/g	---	1.39 (1)	---	---	---	---	1.39 (1)	---	---	---	---	---	---
Hg	ug/g	1.1 ± 0.5	0.99 ± 0.21 (12)	0.949	0.67 - 1.30	0.96 ± 0.19 (5)	0.07 ± 0.17 (4)	0.83 (1)	---	---	---	1.3 (1) PAA	---	0.55 (2) AF
Hg	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---
In	ng/g	---	< 790	---	---	---	---	< 790	---	1.05 ± 0.18 (3)	1.0 ± 0.3 (5)	---	---	---
K	%	1.26 ± 0.05	1.02 ± 0.25 (8)	0.893	0.608 - 1.40	---	---	---	---	---	---	---	---	---
K-40	pCi/g	---	11.36 (2)	---	11.36 - 11.36	---	---	---	---	---	---	11.36 (1) GAMMA	---	---
LoI	%	10.72 ± 0.28	---	---	---	---	---	---	---	---	---	---	---	---
Lb	ug/g	9	24	(2)	---	15 - 33	---	---	---	15	(1)	---	---	33 (1) DC/PES
Mg	%	0.74 ± 0.02	0.72 ± 0.08 (12)	0.684	0.603 - 0.843	0.75 (1)	0.603 (1)	0.73 ± 0.09 (9)	---	---	---	0.684 (1) PAA	---	0.684 (1) PAA
Mn	ug/g	785 ± 97	752 ± 34 (20)	750	700 - 838	744 ± 30 (4)	762 (1)	777 ± 54 (9)	700 (1)	750 (1)	750 (1)	770 (1) DC/PES	746 (1) AE-AF	746 (1) AE-AF
Mn	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn	ug/g	---	---	---	---	---	---	---	---	---	---	---	25 (1) PAA	25 (1) PAA
Mo	ug/g	---	34 ± 8 (3)	37	25 - 40	---	---	---	37 (1)	---	---	40 (1) DC/PES	40 (1) DC/PES	40 (1) DC/PES
N (Kjeldahl)														
Ng	ug/g	797 ± 48	---	---	---	---	---	---	---	---	---	---	---	---
Nb	ug/g	5400 ± 100	5100 ± 600 (8)	5200	4100 - 5600	3200 (1)	5600 (1)	5040 ± 640 (5)	4700 (1)	5450 (1)	5450 (1) PAA	5450 (1) PAA	1.4 (1) PAA	1.4 (1) PAA
Nb	ug/g	---	16 (2)	---	1.4 - 30	---	---	---	---	---	---	---	30 (1) DC/PES	30 (1) DC/PES
Ni	ug/g	45.8 ± 2.9	46 ± 5 (27)	46	33 - 57.8	43 ± 2 (5)	55 (1)	50 ± 5 (9)	37 ± 10 (5)	46 (1) DC/PES	46 (1) DC/PES	47.4 ± 0.7 (4) PAA	47.4 ± 0.7 (4) PAA	37.6 (1) AE-AF
Ni	ug/g	---	---	---	---	---	---	---	---	---	---	---	---	---
Oil&Gr %		1.71 ± 0.26	---	---	---	---	---	---	---	---	---	---	---	---
P	ug/g	510 ± 10	470 ± 40 (4)	452	429 - 527	---	---	447 ± 16 (3)	---	527 (1) DC/PES	527 (1) DC/PES	527 (1) DC/PES	527 (1) DC/PES	527 (1) DC/PES
Pb	ug/g	714 ± 28	710 ± 29 (29)	705	631 - 771	701 ± 18 (11)	705 ± 47 (10)	720 ± 14 (4)	724 (1) ASV	724 (1) ASV	724 (1) ASV	724 (1) ASV	724 (1) ASV	724 (1) ASV
Pb	ug/g	---	---	---	---	---	---	---	---	---	---	631 (1) AF	631 (1) AF	631 (1) AF
Pb	ug/g	---	---	---	---	---	---	---	---	---	---	771 (1) AE-AF	771 (1) AE-AF	771 (1) AE-AF
Pd	ng/g	---	1.0 (1)	---	---	---	---	---	---	---	---	1.0 (1) IDMS	1.0 (1) IDMS	1.0 (1) IDMS

TABLE 1645-1: COMPILED DATA FOR NBS SRM 1645 RIVER SEDIMENT (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS Mean ± SD (n) Method	
			Mean ± SD	n								
Pr	ug/g	---	14	(1)	---	0.86 - 0.86	---	45.7 (2)	---	14 (1)	---	
Rb-226	pCi/g	---	0.86	(2)	---	38 - 50	---	45.7 (2)	---	38.7 ± 0.6 (3)	0.86 (1) GAMMA	
Rb	ug/g	---	41 ± 4	(6)	39	3.68 - 5.02	---	38 (1)	4.35 (2)	40 (1) PAA	---	
S	%	1.1	4.35	(2)	31 ± 6	(11)	33.2	21.7 - 47.2	31 ± 7 (7)	38 (1)	52 (1) PAA	---
Sb	ug/g	51	31 ± 6	(11)	33.2	21.7 - 47.2	33 ± 10 (4)	31 ± 7 (7)	38 (1)	38 (1)	---	---
Sc	ug/g	2.0	2.6	(2)	2.13	3.1	---	2.6 (2)	2.6 (2)	2.6 (2)	52 (1) PAA	---
Se	ug/g	1.5	1.27 ± 0.35	(5)	1.3	0.85 - 5	1.7 (1)	1.2 ± 0.3 (3)	3 (2)	3 (2)	3 (2)	---
Se(IV)	ug/g	---	0.02	(1)	---	---	0.02 (1)	---	---	---	---	---
Se(VI)	ug/g	---	0.08	(1)	---	---	0.08 (1)	---	---	---	---	---
Si	%	23.3 ± 2.7	(5)	23.6	19.7 - 27.27	23.6	27.27 (1)	22.2 (1)	19.7 (1)	19.7 (1)	23.7 (1) DCPES	---
Sm	ug/g	---	1.24	(2)	1.22 - 1.26	---	1.22 - 1.26	---	---	---	1.24 (2) TCGS	---
Sn	ug/g	---	360 ± 50	(3)	366	313 - 416	340 (2)	416 (1)	416 (1)	416 (1)	416 (1)	---
Sr	ug/g	---	880 ± 90	(8)	870	747 - 1033	---	920 ± 240 (3)	943 ± 70 (4)	943 ± 70 (4)	943 ± 70 (4)	856 (2) PAA
Ta	ng/g	---	220	(1)	---	---	---	220 (1)	220 (1)	220 (1)	220 (1)	220 (1)
Te	ug/g	---	4.6	(1)	---	---	---	---	---	---	4.6 (1) IDMS	---
Th	ug/g	1.62 ± 0.22	18 ± 16	(3)	19	1.8 - 34	---	410 ± 180 (6)	410 ± 180 (6)	410 ± 180 (6)	410 ± 180 (6)	410 ± 180 (6)
Ti	ug/g	---	500 ± 160	(10)	491	245 - 700	700 (1)	410 ± 180 (6)	410 ± 180 (6)	410 ± 180 (6)	410 ± 180 (6)	410 ± 180 (6)
Ti	ug/g	---	---	---	---	---	---	---	---	---	---	---
Tl	ug/g	1.44 ± 0.07	3.65	(2)	---	1.9 - 5.4	5.4 (1)	1.11 ± 0.17 (6)	1.11 ± 0.17 (6)	1.11 ± 0.17 (6)	1.11 ± 0.17 (6)	1.11 ± 0.17 (6)
U	ug/g	1.11 ± 0.05	1.15 ± 0.19	(7)	1.16	0.8 - 1.4	---	29 (1)	27 ± 3 (8)	27 ± 3 (8)	27 ± 3 (8)	27 ± 3 (8)
V	ug/g	23.5 ± 6.9	26 ± 4	(13)	26	17.9 - 34	19.8 (2)	29 (1)	27 ± 3 (8)	27 ± 3 (8)	27 ± 3 (8)	27 ± 3 (8)
W	ug/g	---	54	(1)	---	---	---	---	---	---	---	---
Y	ug/g	---	7.2	(2)	---	7 - 7.4	---	7 (1)	7 (1)	7 (1)	7 (1)	7 (1)
Yb	ng/g	---	600	(1)	---	---	---	600 (1)	600 (1)	600 (1)	600 (1)	600 (1)
Zn	ug/g	1720 ± 170	1700 ± 110	(31)	1726	1414 - 1878	1710 ± 80 (5)	1610 (2)	1720 ± 90 (9)	1610 ± 210 (6)	1610 ± 210 (6)	1610 ± 210 (6)
Zn	ug/g	---	---	---	---	---	---	---	---	---	1720 (1) AE-AF	---
Zn	ug/g	---	---	---	---	---	---	---	---	---	1760 ± 30 (3) AF	---
Zn	ug/g	---	---	---	---	---	---	---	---	---	1500 (1) DCPES	---
Zr	ug/g	---	61 ± 9	(3)	57	55 - 71	---	---	---	---	63 (2) PAA	---
Zr	ug/g	---	---	---	---	---	---	---	---	---	57 (1) DCPES	---

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ug/g)</u>										
1.75			IDMS	83LOS 01		178	15	PAA	80KAT 01	
<u>Al (%)</u>										
0.5			ICPES	84SUN 01		340	50	ITNA	81GLA 02	
0.66			ICPES	84SUN 01		370	36	ICPES	84NAD 01	
0.9	11		ICPES	84WOL 01		385	42	ICPES	84NAD 01	
1.4	0.1		DCPES	81CAN 01		400		ICPES	80FLO 01	
1.68		6	EXRF	84JEN 01		1		ICPES	80FLO 01	
2.09	0.32	11	ICPES	84NAD 01						
2.11		6	EXRF	84JEN 01						
2.14			ICPES	84SUN 01						
2.18	0.028		ICPES	84HIR 01			< 100		FAA	82MAT 02
2.23	0.11	11	ICPES	84NAD 01		600		AF	85NAR 02	
2.37	0.04	35	ITNA	81GLA 02						
2.42	0.12		AA	81FAR 01						
2.5392	0.1587		ITNA	85PEN 01						
3.9			ICPES	80FLO 01		2		ICPES	84WOL 01	
6.9		11	ICPES	84WOL 01		2.3		ICPES	84SUN 01	
23.8		11	ICPES	84WOL 01		2.3	0.1	AA	83CAR 01	
<u>As (ug/g)</u>										
47			AF	85NAR 02		2.33		XRF	78TAK 01	
62.6	2.1		RTNA	82ELS 02		2.39	0.06	ICPES	84NAD 01	
63			ICPES	85NAR 02		2.6		ICPES	84WOL 01	
64	3.6		FAA	85FAN 01		2.62	0.06	ICPES	84NAD 01	
65		11	FAA	83XIA 01		2.73	0.15	ITNA	81GLA 02	
65	1		ICPES	84LIV 01		2.8		ICPES	84SUN 01	
65	1		FAE	80DSI 01		2.9	0.13	AA	81FAR 01	
66			HAA	80AGE 03		2.93	0.01	PAA	80KAT 01	
66		11	FAA	83XIA 01		3		ICPES	84SUN 01	
66			IENA	82GLA 02		3.1		EXRF	83MAH 03	
66	5		IENA	82GLA 02		3.106	6	XRF	78TAK 01	
66	13	11	ICPES	84NAD 01		4.1	11	ICPES	84WOL 01	
66.4			ICPES	81GOU 01		4.2		ICPES	80FLO 01	
66.6	4.3		FAA	83LOV 01		4.59	6	EXRF	84JEN 01	
67			ICPES	82NYG 01		6.55	6	EXRF	84JEN 01	
68			IENA	84GLA 02						
68.7	4.1		FAA	83CAR 01						
71			ICPES	80FLO 01		7.2	0.4	FAA	83CAR 01	
71.3	1.3		DCPES	84URA 01		7.6	0.4	AA	83CAR 01	
72			ITNA	81SLO 01		8.9	0.4	RTNA	80VAL 01	
75			WXRF	84ZSO 01		8.9	0.8	ICPES	84MAR 01	
87			PAA	80BER 01		9		ICPES	84SUN 01	
95	6		EXRF	84JEN 01		9.1	0.3	IDMS	80ROS 01	
172	6		EXRF	84JEN 01		9.2	0.5	FAA	81FAR 01	
						9.3	0.1	AA	82SAK 01	
						9.4		FAA	83CAR 01	
						9.5		ICPES	84SUN 01	
						9.55	0.22	AA	82SAK 01	
						9.8	11	AA	84WOL 01	
<u>B (ug/g)</u>										
31	3		TCGS	84GLA 01						

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cd (ug/g) cont.</u>						<u>Cr (%)</u>				
10		11	AA	84WOL 01		1.88	0.27	11	ICPES	84NAD 01
10			ICPES	84SUN 01		1.98	0.24	11	ICPES	84NAD 01
10			ICPES	80FLO 01		2			ICPES	84SUN 01
10.1		6	AF	84NAR 02		2.1	0.2		DCPES	81CAN 01
10.1	0.6	11	AA	83HSU 01		2.29	0.08		PAA	80KAT 01
10.2	0.4		RTNA	79DER 01		2.5	0.4		RTNA	77MEL 01
10.25			AF	85NAR 02		2.66			EXRF	83MAH 03
10.3		11	AA	84WOL 01		2.67	0.03		ICPES	84HIR 01
10.5		6	AF	84NAR 02		2.7		11	ICPES	84WOL 01
10.5	0.4	11	AA	83HSU 01		2.7	0.2		FAA	83CAR 01
10.8			ICPES	85NAR 02		2.8			ICPES	84SUN 01
10.8	2		ICPES	82SCH 04		2.8	0.17		AA	83CAR 01
11			PAA	80BER 01		2.85			ICPES	84SUN 01
11.2		6	ICPES	83CHA 01		2.88		6	ICPES	83CHA 01
11.4	4.3		AE-AF	82GOL 01		2.9		11	ICPES	84WOL 01
11.98		6	ICPES	83CHA 01		2.91	0.01	11	AA	82SAK 01
						2.91	0.24		ICPES	82SCH 04
<u>Ce (ug/g)</u>						2.93		6	ICPES	83CHA 01
						2.97	0.125	11	RTNA	76STE 01
20	0.6		PAA	80KAT 01		2.98			PAA	80BER 01
28			PAA	80BER 01		2.99	0.13	35	ITNA	81GLA 02
120	10		DCPES	81CAN 01		3		11	ICPES	84WOL 01
						3	0.27	11	AA	82SAK 01
<u>Co (ug/g)</u>						3.02			ICPES	80FLO 01
						3.15	0.147	11	RTNA	76STE 01
6.7	0.5	11	FAA	83CAR 01		3.16	0.152	11	RTNA	76STE 01
7.2		11	FAA	83CAR 01		3.18	0.08		AA	81FAR 01
8	0.2	35	ITNA	81GLA 02		3.19	0.038	6	XRF	80IWA 01
8.4	0.7		RTNA	77MEL 01		3.25	0.049	6	XRF	80IWA 01
8.5	0.3		PAA	80KAT 01		3.25	0.152	11	RTNA	76STE 01
9.96	0.12		RTNA	79DER 01		3.2706	0.155		ITNA	76STE 01
10.4			ICPES	84SUN 01		3.4	0.148	11	RTNA	76STE 01
10.8			ICPES	84SUN 01		3.52		6	XRF	78TAK 01
11			ICPES	80FLO 01		4.17		6	EXRF	84JEN 01
12.8			ICPES	84SUN 01		6.28		6	EXRF	84JEN 01
15.6	0.6		ICPES	84HIR 01						
24			PAA	80BER 01		<u>Cs (ug/g)</u>				
<u>Co-60 (pCi/g)</u>						2.32	0.13	35	ITNA	81GLA 02
<	0.06		UU	84MEL 01		2.69	0.14		ITNA	84GLA 11
<	0.06		GAMMA	84KRI 01		3.3	0.2		RTNA	77MEL 01
<u>Cs-137 (pCi/g)</u>						<	0.05		GAMMA	84KRI 01
						<	0.05		UU	84MEL 01

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Cu (ug/g)</u>						<u>Fe (%)</u>				
78		6	XRF	78TAK 01		7.7			ICPES	84SUN 01
84		6	ICPES	83CHA 01		7.9	0.4		DCPES	81CAN 01
90		6	ICPES	83CHA 01		8.372		6	XRF	78TAK 01
90.9	11.2		AA	84KAN 01		8.5	0.5		RTNA	77MEL 01
96	14		ASV	81DOG 01		8.8		11	ICPES	84WOL 01
98		11	VV	84WOL 01		9.05	0.19	11	ICPES	84NAD 01
100	20		AA	77YAN 01		9.25	0.11	11	ICPES	84NAD 01
101		11	VV	84WOL 01		9.5		11	ICPES	84WOL 01
101	4.2		ICPES	84HIR 01		9.7	0.5		AA	83CAR 01
102	8		DCPES	81CAN 01		9.74		0.12	ICPES	84HIR 01
103	8		FAA	83CAR 01		9.89		6	XRF	78TAK 01
105			ICPES	84SUN 01		10.3			ICPES	84SUN 01
105	14		ICPES	82SCH 04		10.4		6	XRF	78TAK 01
106			PAA	80BER 01		10.4			ICPES	84SUN 01
108		6	XRF	78TAK 01		10.5	0.3	35	ITNA	81GLA 02
108		11	VV	84WOL 01		10.51	0.18		PAA	80KAT 01
108	5	11	ICPES	84NAD 01		10.6	0.3		AA	81FAR 01
108	11		ICPES	84SOB 01		11		6	ICPES	83CHA 01
109	6		AA	83CAR 01		11.2			EXRF	83MAH 03
111	5		ASV	83MAD 01		11.2	0.6	11	AA	82SAK 01
111	7		FAA	81FAR 01		11.4	1.3		ICPES	82SCH 04
112			ICPES	84SUN 01		11.5			ICPES	80FLO 01
112			ICPES	84SUN 01		11.5		6	ICPES	83CHA 01
113		6	XRF	78TAK 01		11.8	0.2	11	AA	82SAK 01
115	7	11	ICPES	84NAD 01		12.3		6	EXRF	84JEN 01
119			ICPES	80FLO 01		12.9		11	ICPES	84WOL 01
123	6		RTNA	79DER 01		20.1		6	EXRF	84JEN 01
124	4	11	AA	82SAK 01						
125	3	11	AA	82SAK 01						
125.2	8.2		RTNA	80VAL 01						
128			WXRF	84ZSO 01		14	1		DCPES	81CAN 01
190	66		EXRF	83MAH 03		38			ICPES	80FLO 01
213		6	EXRF	84JEN 01		40		6	EXRF	84JEN 01
379		6	EXRF	84JEN 01		71		6	EXRF	84JEN 01
<u>Dy (ug/g)</u>						<u>Gd (ug/g)</u>				
2	0.2		DCPES	81CAN 01		0.96	0.14	4	TCGS	85GLA 05
						1.16	0.15	4	TCGS	85GLA 05
<u>Eu (ug/g)</u>						<u>Hf (ug/g)</u>				
0.31	0.03	35	ITNA	81GLA 02		1.39	0.07	35	ITNA	81GLA 02
0.7			ICPES	80FLO 01						
<u>F (ug/g)</u>										
1336	97		ISE	83BET 02						
1740	60		ISE	83KNA 01						

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Hg (ug/g)</u>					<u>Mg (%) cont.</u>					
0.4		6	AF	84MAR 02		0.75	0.02		AA	81FAR 01
0.67	0.07		FAA	83CAR 01		0.78			ICPES	84SUN 01
0.7		6	AF	84MAR 02		0.82			ICPES	84SUN 01
0.83	0.05		ICPES	84MAR 01		0.84			ICPES	84SUN 01
0.85	0.036		CVAA	80NAD 01		0.8426		11	ICPES	84WOL 01
0.937	0.36		RTNA	84DEL 01		2.1	0.1		AA	83CAR 01
0.949	0.055		RTNA	84DRA 01		2.3			XRF	83CAR 01
1.05	0.19		CVAA	81KAH 01		4.1			ICPES	80FLO 01
1.1	0.04		CVAA	83CAR 01						
1.1	0.1		RTNA	77MEL 01						
1.11	0.26		CVAA	80WHI 01		700			EXRF	83MAH 03
1.3			PAA	80BER 01		707	7.2		ICPES	84HIR 01
1.3	0.2		RTNA	80VAL 01		710	40	11	ICPES	84NAD 01
						716	110	11	AA	82SAK 01
<u>In (ng/g)</u>					<u>Mn (ug/g)</u>					
<	790		RTNA	83BER 01		721		11	VV	84WOL 01
						723	77	11	AA	82SAK 01
						735		11	VV	84WOL 01
						746	130		AE-AF	82GOL 01
<u>K (%)</u>					<u>ICPES</u>					
						750		11	VV	84WOL 01
0.04			ICPES	84SUN 01		750	18		PAA	80KAT 01
0.09	0.002		AA	83CAR 01		756	15		AA	83CAR 01
0.15			ICPES	84SUN 01		760	30	11	ICPES	84NAD 01
0.608	6		EXRF	84JEN 01		762	9	35	ITNA	81GLA 02
0.857	6		EXRF	84JEN 01		768	85		ICPES	82SCH 04
0.87	0.12	11	ICPES	84NAD 01		770	30		DCPES	81CAN 01
0.893	6		XRF	78TAK 01		780	90		AA	81FAR 01
1.06	0.13	11	ICPES	84NAD 01		793	52		ICPES	84SOB 01
1.22			ICPES	84SUN 01		798			ICPES	84SUN 01
1.24	6		XRF	78TAK 01		838			ICPES	84SUN 01
1.4			EXRF	83MAH 03		870			ICPES	84SUN 01
						1460		6	XRF	78TAK 01
<u>K-40 (pCi/g)</u>					<u>3321</u>					
11.36			UU	84MEL 01						
11.36			GAMMA	84KRI 01		25			PAA	80BER 01
						37	1.9		ICPES	84HIR 01
<u>La (ug/g)</u>					<u>40</u>					
					<u>DCPES</u>					
15			ICPES	80FLO 01	<u>81CAN 01</u>					
33	3		DCPES		<u>Mo (ug/g)</u>					
						1600			ICPES	84SUN 01
						2050			ICPES	84SUN 01
<u>Mg (%)</u>					<u>3200</u>					
						4100	100		AA	83CAR 01
0.603	0.1809		ITNA	85PEN 01		4700			ICPES	84NAD 01
0.62	0.16	11	ICPES	84NAD 01		4700	400	11	ICPES	84NAD 01
0.65	0.02	11	ICPES	84NAD 01		5200			ICPES	84SUN 01
0.67	0.0092		ICPES	84HIR 01		5450	110		PAA	80KAT 01
0.6823		11	ICPES	84WOL 01		5600		6	ICPES	83CHA 01
0.684	0.01		PAA	80KAT 01		5600		6	ICPES	83CHA 01
0.7095		11	ICPES	84WOL 01		5600	200	35	ITNA	81GLA 02

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Nb (ug/g)</u>									
1.4	0.07		PAA	80KAT 01	684	35		FAA	83CAR 01
30	3		DCPES	81CAN 01	685		11	AA	84WOL 01
<u>Ni (ug/g)</u>									
28	6	XRF	78TAK 01	685	10	11	AA	82SAK 01	693
30	6	XRF	78TAK 01	693			ICPES	85MAR 02	695
33	6	XRF	78TAK 01	695	45		ASV	81DOG 01	701
37.6	6.4	AE-AF	82GOL 01	701		6	ICPES	83CHA 01	704
39.8	11	FAA	83CAR 01	704		6	ICPES	83CHA 01	705
41	2	11	AA	82SAK 01	705		11	AA	84WOL 01
42	4	11	AA	82SAK 01	705	35		EXRF	84JEN 01
43	11	VV	84WOL 01	717		6	EXRF	84JEN 01	718
44	6	ICPES	83CHA 01	718	28	11	AA	83HSU 01	719
44.7	2.7	AA	83CAR 01	719		6	XRF	83HSU 01	721
44.9	11	VV	84WOL 01	721	20		ICPES	82SCH 04	721
45	11	VV	84WOL 01	722	26	11	AA	83HSU 01	724
45		ICPES	80FLO 01	724	18		ASV	83MAD 01	724
45.8	2.8	11	FAA	83CAR 01	724	43	11	PAA	80BER 01
46	4	DCPES	81CAN 01	725			AA	82SAK 01	725
46.1	2.5	ICPES	82SCH 04	725		11	ICPES	80FLO 01	732
46.6	4.6	PAA	78MAS 01	732			84SUN 01	84SUN 01	740
47		ICPES	84SUN 01	740			EXRF	83MAH 03	745
47	3	PAA	80KAT 01	745			ICPES	84SUN 01	768
48		PAA	80BER 01	768			ICPES	84SUN 01	771
48	6	EXRF	84JEN 01	771	231		AE-AF	82GOL 01	1019
48		PAA	78KAT 01	1019		6	XRF	84JEN 01	1270
48		WXRF	84ZSO 01	1270		6	EXRF	84JEN 01	
50	6	ICPES	83CHA 01	<u>Pd (ng/g)</u>					
52		ICPES	84SUN 01	1			IDMS	83LOS 01	
53		ICPES	84SUN 01						
55	2.4	ICPES	84HIR 01						
55	3	RTNA	77MEL 01	<u>Pr (ug/g)</u>					
57.8	7.7	ICPES	84SOB 01	14					
85	6	EXRF	84JEN 01				ICPES	80FLO 01	
<u>P (ug/g)</u>									
429	9	11	ICPES	84NAD 01	0.86			UU	84MEL 01
452	27		ICPES	84HIR 01	0.86			GAMMA	84KRI 01
459	31	11	ICPES	84NAD 01					
526.9	6.4		DCPES	84URA 01	<u>Ra-226 (pCi/g)</u>				
<u>Pb (ug/g)</u>									
538	39	11	ICPES	84NAD 01	38		6	XRF	78TAK 01
597	40	11	ICPES	84NAD 01	39		6	EXRF	84JEN 01
631		AF	85NAR 02	39		6	XRF	78TAK 01	40
670	22		ICPES	84MAR 01	40	2		PAA	80KAT 01
680	20		AA	77YAN 01	41.4	0.5		RTNA	77MEL 01
683	29		FAA	81FAR 01	50	7	35	ITNA	81GLA 02
					70		6	EXRF	84JEN 01

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>S (%)</u>										
3.68		6	EXRF	84JEN 01		15.4		6	EXRF	84JEN 01
5.02		6	EXRF	84JEN 01		19.7		6	EXRF	84JEN 01
<u>Sb (ug/g)</u>										
5.9			AF	85NAR 02		27.2728	2.1949		ITNA	85PEN 01
21.7			RTNA	81NIS 01						
22.6			RTNA	81KIB 01						
25			HAA	81YAM 01						
28.3	1.2		FAA	82MAT 02		1.22		0.14	4	TCGS
31	4		ITNA	81HAM 01		1.26		0.14	4	TCGS
32.2	3.2	11	FAA	83CAR 01						
33.2			RTNA	81SLO 01						
33.6	2.2		RTNA	82ELS 02						
36			ITNA	81SLO 01		6			AF	85NAR 02
38			ICPES	82NYG 01		313			FAA	82MAT 02
40	5	35	ITNA	81GLA 02		366			FAA	84LON 01
47.2		11	FAA	83CAR 01		416		15		RTNA
52			PAA	80BER 01						83BER 01
66			ICPES	85NAR 02						
<u>Sc (ug/g)</u>										
<	2		DCPES	81CAN 01		747		38	11	ICPES
2.13	0.07	35	ITNA	81GLA 02		814		43	11	ICPES
3.1	0.5		RTNA	77MEL 01		851			PAA	80KAT 01
<u>Se (ug/g)</u>										
0.85			RTNA	81SLO 01		862			PAA	80BER 01
1			ICPES	81GOU 01		870			XRF	78TAK 01
1.3	0.2		RTNA	77MEL 01		910			EXRF	83MAH 03
1.5	0.1	35	RTNA	81GLA 01		960			XRF	84JEN 01
1.7	0.3		HAA	85CUT 01		1033			EXRF	78TAK 01
5			ICPES	80FLO 01		1200			ICPES	80FLO 01
8			ICPES	82NYG 01		1750			EXRF	84JEN 01
9.8			ICPES	85NAR 02						
24			AF	85NAR 02						
<u>Se(IV) (ug/g)</u>										
0.02	0.01		HAA	85CUT 01		220		20	35	ITNA
<u>Se(VI) (ug/g)</u>										
0.08	0.03		HAA	85CUT 01		4.6			IDMS	83LOS 01
<u>Th (ug/g)</u>										
						1.8			PAA	80BER 01
						19			EXRF	84JEN 01
						34			EXRF	84JEN 01

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>Ti (ug/g)</u>					<u>Y (ug/g)</u>						
184		11	ICPES	84WOL 01		<	7		DCPES	81CAN 01	
245		11	ICPES	84WOL 01		7			ICPES	80FLO 01	
258		6	XRF	78TAK 01		7.4	0.3		PAA	80KAT 01	
370		11	ICPES	84NAD 01							
490		6	XRF	78TAK 01							
491	14		ICPES	84HIR 01							
590		11	ICPES	84NAD 01							
597		11	ICPES	84WOL 01		600					
600	100		DCPES	81CAN 01							
642	13		PAA	80KAT 01							
700			AA	82MAT 04							
825			PAA	80BER 01		1254			EXRF	83MAH 03	
						1392	10		ICPES	84HIR 01	
<u>Tl (ug/g)</u>						1414	84		RTNA	77MEL 01	
						1480		6	XRF	78TAK 01	
<	10		DCPES	81CAN 01		1500	100		DCPES	81CAN 01	
1.9			PAA	80BER 01		1540	67		PAA	80KAT 01	
5.4	0.5		FAA	83CAR 01		1570	57	11	ICPES	84NAD 01	
						1587			ICPES	80FLO 01	
<u>U (ug/g)</u>						1610	40		AA	77YAN 01	
						1640		6	XRF	78TAK 01	
0.8	0.02		RTNA	78DER 01		1640	40		AA	81FAR 01	
1.11	0.03		DNA	85GAU 04		1660		11	VV	84WOL 01	
1.11	0.05		DNA	86GAU 01		1695			WXRF	84ZSO 01	
1.16			DNA	84GLA 02		1700			ICPES	84SUN 01	
1.17	0.01		DNA	85GLA 04		1713	145		ICPES	82SCH 04	
1.3			DNA	84GLA 11		1720	361		AE-AF	82GOL 01	
1.4			PAA	80BER 01		1726		11	VV	84WOL 01	
						1730			PAA	80BER 01	
<u>V (ug/g)</u>						1735	37	11	ICPES	84NAD 01	
						1737		6	AF	84NAR 02	
17.9		11	FAA	83CAR 01		1750		6	AF	84NAR 02	
21.6	1.5	11	FAA	83CAR 01		1750	19	11	AA	82SAK 01	
22			ICPES	84SUN 01		1767	177		AA	83CAR 01	
24			ICPES	84SUN 01		1768	158		ICPES	84SOB 01	
24.1	6.5		ICPES	82SCH 04		1785			ICPES	85NAR 02	
25			ICPES	80FLO 01		1794			AF	85NAR 02	
26			WXRF	84ZSO 01		1794		6	XRF	78TAK 01	
27			ICPES	84SUN 01		1795	25	11	AA	82SAK 01	
29	6	35	ITNA	81GLA 02		1800			ICPES	84SUN 01	
29.6		11	ICPES	84WOL 01		1800			ICPES	84SUN 01	
30.8		11	ICPES	84WOL 01		1806	37		RTNA	79DER 01	
31	0.8		ICPES	84HIR 01		1810		6	EXRF	84JEN 01	
34	3		DCPES	81CAN 01		1878		11	VV	84WOL 01	
39.6		11	ICPES	84WOL 01		3240		6	EXRF	84JEN 01	
<u>W (ug/g)</u>						<u>Zr (ug/g)</u>					
						<	55		EXRF	83MAH 03	
54	9		DCPES	81CAN 01		55			PAA	80KAT 01	
						57	6		DCPES	81CAN 01	
						71			PAA	80BER 01	

TABLE 1646-1: COMPILED DATA FOR NBS SRM 1646 ESTUARINE SEDIMENT (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		NAA		ICPES		OTHER METHODS	
		Mean	SD	Mean ± SD	(n)	Mean	SD	Mean ± SD	(n)	Mean	SD	Mean	(n)	Mean	(n)
Ag	ng/g	---		88	(1)	---		5.12 - 6.03		5.98	(2)	5.12 (1)	---	88	(1) AA
Al	%	6.25 ± 0.2		5.54 ± 0.42	(5)	5.4		10.5 - 11.7		11.1	(2)	5.3 (2)	DCPES	5.3 (2)	DCPES
As	ug/g	11.6 ± 1.3		11.1 ± 0.6	(3)	11.1		81 - 84		409	(2)	11.1 (1)	DCPES	11.1 (1)	DCPES
B	ug/g	---		82.5	(2)	---		370 - 448		409	(2)	82.5 (2)	TCGS	82.5 (2)	TCGS
Ba	ug/g	---		409	(2)	---		---		---		---		---	
Be	ug/g	1.5		1.5	(1)	---		---		---		1.5	(1)	---	---
Br	ug/g	---		117	(2)	---		112 - 122		117	(2)	---		---	
Ca	ug/g	8300 ± 300		8440	(2)	---		8120 - 8760		8760	(1)	---		8120	(1) AA
Cd	ng/g	360 ± 70		325 ± 60	(3)	355		260 - 360		---		360	(1) IDMS	360	(1) IDMS
Cd	ng/g	---		---		---		---		---		260	(1) AAC	260	(1) AAC
Ce	ug/g	80		80 ± 4	(4)	77.2		76 - 84		81 ± 3	(3)	76	(1)	355	(1) AA
Cl	%	---		1.38	(1)	---		---		1.38	(1)	---		---	
Co	ug/g	10.5 ± 1.3		9.1 ± 1.6	(5)	8.0		7.8 - 11		9.4 ± 1.6	(4)	7.8	(1)	---	
Cr	ug/g	76 ± 3		76 ± 4	(7)	75		72 - 84		79 ± 4	(4)	72	(1)	73	(2) DCPES
Cs	ug/g	3.7		3.69 ± 0.10	(5)	3.7		3.6 - 3.85		3.69 ± 0.10	(5)	---		---	
Cu	ug/g	18 ± 3		17 ± 2	(4)	16.8		13.3 - 19		---		19	(1)	17.8 (1) IDMS	17.8 (1) IDMS
Cu	ug/g	---		---		---		---		---		---		16.8 (1) ASV	16.8 (1) ASV
Cu	ug/g	---		---		---		---		---		---		13.3 (1) AAC	13.3 (1) AAC
Dy	ug/g	---		4.3 ± 1.6	(3)	4.04		2.8 - 5.98		5.98	(1)	4.04 (1)	2.8 (1) DCPES	2.8 (1) DCPES	2.8 (1) DCPES
Er	ug/g	---		2.41	(1)	---		---		---		2.41 (1)	---	---	
Eu	ug/g	1.5		1.44 ± 0.16	(3)	1.36		1.34 - 1.62		1.48	(2)	1.36 (1)	---	---	
Fe	%	3.35 ± 0.1		3.22 ± 0.28	(6)	3.02		2.9 - 3.52		3.46 ± 0.07	(3)	3.02 (1)	2.95 (2) DCPES	3.02 (1)	2.95 (2) DCPES
Ga	ug/g	---		19	(1)	---		---		---		---		19 (1) DCPES	19 (1) DCPES
Gd	ug/g	---		4.5 ± 0.7	(3)	4.6		3.7 - 5.09		---		5.09 (1)	4.15 (2) TCGS	5.09 (1)	4.15 (2) TCGS
Ge	ug/g	1.4		---		---		---		---		---		---	
Hf	ug/g	---		11.2	(2)	---		11.1 - 11.2		11.2	(2)	---		---	
Hg	ng/g	63 ± 12		---		---		---		---		0.84 (1)	---	0.84 (1)	---
Ho	ug/g	---		0.84	(1)	---		---		---		---		---	
I	ug/g	---		34.2	(2)	---		32.5 - 36		34.2	(2)	---		---	
K	%	1.4		1.83	(2)	---		1.43 - 2.23		1.83	(2)	---		---	
La	ug/g	---		37 ± 2	(3)	36		35.7 - 38.9		38.9	(1)	35.7 (1)	36 (1) DCPES	35.7 (1)	36 (1) DCPES
Li	ug/g	49		46	(1)	---		---		---		46	(1) AA	46 (1) AA	46 (1) AA
Lu	ng/g	---		380 ± 60	(3)	370		320 - 444		407	(2)	320	(1)	0.969	(1) AA
Mg	%	1.09 ± 0.08		0.970 ± 0.001	(3)	0.97		0.969 - 0.970		0.97	(1)	0.969	(1)	0.97 (1) AA	0.97 (1) AA

TABLE 1646-1: COMPILED DATA FOR NBS SRM 1646 ESTUARINE SEDIMENT (cont.)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN		RANGE		NAA		ICPES		OTHER METHODS	
		Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean (n)	Method
Mn	ug/g	375 ± 20	(6)	330 ± 46	(6)	328	270 - 385	9 - 19	(3)	368 ± 15	(3)	328	(1)	275 (2)	DCPES
Mo	ug/g	2	(2)	2.04 ± 0.19	(3)	2.1	1.82 - 2.19	2.04 ± 0.19	(3)	---	9 (1)	19 (1)	19 (1)	DCPES	
Na	%	2	---	53	(1)	---	---	---	---	---	---	---	---	---	---
Nb	ug/g	---	---	36 ± 4	(3)	34.7	32.6 - 40	31 - 32.8	---	36.3	(2)	34.7 (1)	---	---	DCPES
Nd	ug/g	---	---	31.7 ± 0.9	(4)	31	31 - 32.8	---	---	---	---	32 (1)	31 (2)	31 (2)	DCPES
Ni	ug/g	32 ± 3	---	---	---	---	---	---	---	---	---	---	32.8 (1)	32.8 (1)	AAC
Ni	ug/g	---	---	---	---	---	---	---	---	---	---	433	(1)	529.6 (1)	DCPES
P	ug/g	540 ± 5	480	(2)	---	433 - 529.6	---	---	---	---	---	29 (1)	29 (1)	AAC	
Pb	ug/g	28.2 ± 1.8	27.8 ± 1.2	(3)	28	26.5 - 29	---	---	---	---	---	26.5 (1)	26.5 (1)	ASV	
Pb	ug/g	---	---	---	---	---	---	---	---	---	---	28 (1)	28 (1)	AA	
Pb	ug/g	---	---	8.56	(1)	---	---	---	---	---	8.56 (1)	---	---	---	---
Pr	ug/g	87	87	(2)	---	83 - 91.5	87.2	(2)	---	---	---	---	---	---	---
Rb	ug/g	0.96	---	---	---	---	---	---	---	---	---	---	---	---	---
S	ng/g	400	790 ± 160	(3)	610	610 - 910	790 ± 160	(3)	---	---	---	---	---	---	---
Sb	ug/g	10.8	10.8 ± 0.4	(6)	10.7	10.3 - 11.56	10.8 ± 0.4	(6)	---	---	---	590	(1)	580 (1)	GC
Sc	ug/g	600	530 ± 90	(3)	580	430 - 590	---	---	---	---	---	430	(1)	430 (1)	AA
Se	ng/g	---	---	---	---	---	---	---	---	---	---	1 (1)	1 (1)	1 (1)	AA
Se(IV)	ng/g	1	(1)	---	---	---	---	---	---	---	---	40 (1)	40 (1)	40 (1)	AA
Se(VI)	ng/g	---	40	(1)	---	---	---	---	---	---	---	30 (2)	30 (2)	30 (2)	DCPES
Si	%	31.0	30.0	(2)	---	30.0 - 30.0	---	---	---	6.21	(1)	6.21 (1)	6.5 (2)	6.5 (2)	TCGS
Sm	ug/g	---	6.4 ± 0.3	(4)	6.21	6.2 - 6.8	---	---	---	220	(1)	---	---	---	---
Sr	ug/g	---	220	(1)	---	---	---	---	0.94 - 1.07	1.00	(2)	---	---	---	---
Ta	ug/g	---	1.00	(2)	---	0.92 - 0.98	0.95	(2)	---	0.95	(2)	---	---	---	---
Tb	ug/g	---	0.95	(2)	---	---	---	---	---	---	---	---	---	---	---
Te	ng/g	500	---	---	---	---	---	---	---	---	---	---	---	---	---
Th	ug/g	10	10.0 ± 0.6	(5)	10.3	9.2 - 10.7	10.0 ± 0.6	(5)	---	---	---	---	---	---	---
Ti	ug/g	5100	4200 ± 800	(5)	3750	3600 - 5223	5010	(2)	3750	(1)	3600 (2)	3600 (2)	3600 (2)	3600 (2)	DCPES
Tl	ug/g	0.5	16	(1)	---	---	---	---	---	---	---	16 (1)	16 (1)	16 (1)	DCPES
U	ug/g	---	2.99 ± 0.06	(5)	3.00	2.9 - 3.07	2.99 ± 0.06	(5)	---	---	---	---	---	---	---
V	ug/g	94 ± 1	86 ± 3	(5)	85	82.3 - 89	82.6	(2)	85 (1)	19.9 (1)	89 (2)	89 (2)	89 (2)	89 (2)	DCPES
Y	ug/g	---	18.4	(2)	---	17 - 19.9	---	---	---	---	17 (1)	17 (1)	17 (1)	17 (1)	DCPES
Yb	ug/g	---	2.6 ± 0.6	(4)	2.2	2.12 - 3.4	2.98	(2)	2.12 (1)	2.2 (1)	2.2 (1)	2.2 (1)	2.2 (1)	2.2 (1)	DCPES
Zn	ug/g	138 ± 6	124 ± 14	(4)	120	107 - 139	---	---	107 (1)	125 (2)	125 (2)	107 (1)	107 (1)	125 (2)	DCPES
Zn	ug/g	---	---	335	(2)	---	---	---	---	---	---	139 (1)	139 (1)	139 (1)	AA
Zr	ug/g	---	---	---	---	270 - 400	400	(1)	---	270 (1)	270 (1)	270 (1)	270 (1)	270 (1)	DCPES

TABLE 1646-2: INDIVIDUAL DATA FOR NBS SRM 1646 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>					<u>Cl (%)</u>				
88	8	FAA	83BLO	01	1.383	0.054	ITNA	85SUN	01
<u>Al (%)</u>					<u>Co (ug/g)</u>				
5.12	0.17	ICPES	84HIR	01	7.8	0.3	ICPES	84HIR	01
5.2	0.12	DCPES	81CAN	01	8	2	ITNA	85HOL	01
5.4	0.2	DCPES	82SIN	01	8	2	IENA	85HOL	01
5.93	0.3	ITNA	85SUN	01	10.6	0.6	ITNA	85SUN	01
6.03	0.2	ITNA	85HOL	01	11	1	ITNA	84GLA	11
					17	3	DCPES	81CAN	01
					19	3	DCPES	82SIN	01
<u>As (ug/g)</u>					<u>Cr (ug/g)</u>				
10.5	0.9	ITNA	85HOL	01	72	0.3	ICPES	84HIR	01
11.1	0.6	DCPES	84URA	01	72	1	DCPES	82SIN	01
11.7	2.5	IENA	85HOL	01	74	1	DCPES	81CAN	01
					75	1	ITNA	85HOL	01
81	3	TCGS	85GAU	04	78.4	3	ITNA	85SUN	01
84	8	TCGS	84GLA	01	80		ITNA	84GLA	11
					84	5	ITNA	86GAU	01
<u>Ba (ug/g)</u>					<u>Cs (ug/g)</u>				
370		ITNA	84GLA	11	3.6	0.2	ITNA	84GLA	11
448	50	ITNA	85SUN	01	3.6	0.4	ITNA	84GLA	02
<u>Be (ug/g)</u>					3.7		ITNA	86GAU	01
1.5	0.14	ICPES	86GAU	01	3.7	0.6	ITNA	85HOL	01
					3.85	0.15	ITNA	85SUN	01
<u>Br (ug/g)</u>					<u>Cu (ug/g)</u>				
112	1	ITNA	85SUN	01	13.3	0.6	AAC	85GAU	04
122	2	IENA	85HOL	01	16.8		ASV	83MAD	01
<u>Ca (ug/g)</u>					17.8	0.4	IDMS	84BRO	03
8120		AA	85GAU	04	19	0.6	ICPES	84HIR	01
8760	620	ITNA	85SUN	01	31	2.8	DCPES	81CAN	01
<u>Cd (ng/g)</u>					<u>Dy (ug/g)</u>				
260		AAC	85GAU	04	2.8	0.21	DCPES	81CAN	01
355	40	FAA	86GAU	01	4.04	0.07	ICPES	85JAR	02
360	10	IDMS	84BRO	03	5.98	0.23	ITNA	85SUN	01
<u>Ce (ug/g)</u>					<u>Er (ug/g)</u>				
76	0.9	ICPES	85JAR	02	2.41	0.04	ICPES	85JAR	02
77.2	1.6	ITNA	85SUN	01	<u>Eu (ug/g)</u>				
82		ITNA	84GLA	11	1.34		ITNA	84GLA	11
84	8	ITNA	85HOL	01	1.36		ICPES	85JAR	02
110	4.1	DCPES	81CAN	01	1.62	0.17	ITNA	85SUN	01

TABLE 1646-2: INDIVIDUAL DATA FOR NBS SRM 1646 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Fe (%)</u>					<u>Mg (%)</u>				
2.9	0.05		DCPES	81CAN 01	0.9	0.08	IENA	85HOL 01	
3	0.15		DCPES	82SIN 01	0.969	0.015	ICPES	84HIR 01	
3.02	0.04		ICPES	84HIR 01	0.97		AA	85GAU 04	
3.38			ITNA	84GLA 11	0.97	0.09	ITNA	85SUN 01	
3.49	0.1		ITNA	85SUN 01					
3.52	0.11		ITNA	85HOL 01	<u>Mn (ug/g)</u>				
<u>Ga (ug/g)</u>					270	15	DCPES	82SIN 01	
19	1.6		DCPES	81CAN 01	280	5	DCPES	81CAN 01	
<u>Gd (ug/g)</u>					328	3	ICPES	84HIR 01	
3.7	0.4	4	TCGS	85GLA 05	356	17	IENA	85HOL 01	
4.6	0.8	4	TCGS	85GLA 05	362	8	ITNA	85HOL 01	
5.09	0.13		ICPES	85JAR 02	385	20	ITNA	85SUN 01	
<u>Hf (ug/g)</u>					<u>Mo (ug/g)</u>				
11.1	0.7		ITNA	85SUN 01	9	0.3	ICPES	84HIR 01	
11.2			ITNA	84GLA 11	19	2.5	DCPES	81CAN 01	
<u>Ho (ug/g)</u>					1.82	0.01	IENA	85HOL 01	
0.84	0.03		ICPES	85JAR 02	2.1	0.2	ITNA	85HOL 01	
<u>I (ug/g)</u>					2.19	0.02	ITNA	85SUN 01	
32.5	2.9		ITNA	85SUN 01	<u>Nb (ug/g)</u>				
36	2		IENA	85HOL 01	53	4	DCPES	81CAN 01	
<u>K (%)</u>					<u>Nd (ug/g)</u>				
1.43	0.17		IENA	85HOL 01	32.6	9.7	ITNA	85SUN 01	
2.23	0.25		ITNA	85SUN 01	34.7	0.6	ICPES	85JAR 02	
<u>La (ug/g)</u>					40		ITNA	84GLA 11	
35.7	0.5		ICPES	85JAR 02	<u>Ni (ug/g)</u>				
36	0.63		DCPES	81CAN 01	31	1.5	DCPES	81CAN 01	
38.9	1.3		ITNA	85SUN 01	31	5	DCPES	82SIN 01	
<u>Li (ug/g)</u>					32	0.3	ICPES	84HIR 01	
46		AA		85GAU 04	32.8	1.7	AAC	85GAU 04	
<u>Lu (ng/g)</u>					<u>P (ug/g)</u>				
320			ICPES	85JAR 02	433	1	ICPES	84HIR 01	
370			ITNA	84GLA 11	529.6	3.9	DCPES	84URA 01	
444	18		ITNA	85SUN 01	<u>Pb (ug/g)</u>				
					26.5		ASV	83MAD 01	
					28	4	FAA	86GAU 01	
					29	1	AAC	85GAU 04	

TABLE 1646-2: INDIVIDUAL DATA FOR NBS SRM 1646 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference					
<u>Pr (ug/g)</u>														
8.56	0.19	ICPES	85JAR 02		0.94		ITNA	84GLA 11						
1.07					1.07	0.16	ITNA	85SUN 01						
<u>Rb (ug/g)</u>														
83		ITNA	84GLA 11		0.92		ITNA	84GLA 11						
91.5	4.6	ITNA	85SUN 01		0.98	0.16	ITNA	85SUN 01						
<u>Sb (ng/g)</u>														
330	80	IENA	85HOL 01		9.2	0.4	IENA	85HOL 01						
610		ITNA	84GLA 11		9.6		ITNA	84GLA 11						
850		ITNA	84GLA 02		10.3	0.4	ITNA	85SUN 01						
910	250	ITNA	85SUN 01		10.4	1	ITNA	86GAU 01						
<u>Sc (ug/g)</u>														
10.3	0.4	ITNA	84GLA 11		10.7		ITNA	85GAU 04						
10.4	0.2	ITNA	84GLA 02		12	0.7	ITNA	85HOL 01						
10.7	0.6	IENA	85HOL 01		<u>Ti (ug/g)</u>									
10.9	0.4	ITNA	85HOL 01		3600	100	DCPES	81CAN 01						
11	0.2	ITNA	85SUN 01		3600	360	DCPES	82SIN 01						
11.56	0.06	ITNA	86GAU 01		3750	150	ICPES	84HIR 01						
<u>Se (ng/g)</u>														
430	20	HAA	85CUT 01		4800		ITNA	85HOL 01						
580	50	GC	83SIU 01		5223	278	ITNA	85SUN 01						
590	60	ICPES	83SIU 01		<u>Tl (ug/g)</u>									
<u>Se(IV) (ng/g)</u>														
1	0.6	HAA	85CUT 01		16	2.7	DCPES	81CAN 01						
<u>Se(VI) (ng/g)</u>														
40	20	HAA	85CUT 01		2.9		DNA	84GLA 11						
<u>Si (%)</u>														
30	0.52	DCPES	81CAN 01		2.96	0.09	DNA	85GAU 04						
30	1.2	DCPES	82SIN 01		3		DNA	84GLA 02						
<u>Sm (ug/g)</u>														
6.2	0.6	TCGS	85GLA 05		3.01	0.1	DNA	86GAU 01						
6.21	0.13	ICPES	85JAR 02		3.07	0.48	ITNA	85SUN 01						
6.52	0.19	ITNA	85SUN 01		<u>V (ug/g)</u>									
6.8	0.6	TCGS	85GLA 05		82.3	3	ITNA	85SUN 01						
89					83	5	ITNA	85HOL 01						
89					85	4.2	ICPES	84HIR 01						
17					89	2.3	DCPES	81CAN 01						
19.9					89	9	DCPES	82SIN 01						
<u>Sr (ug/g)</u>														
220	73	ITNA	85SUN 01		Y (ug/g)		DCPES	81CAN 01						

TABLE 1646-2: INDIVIDUAL DATA FOR NBS SRM 1646 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>Yb (ug/g)</u>					
2.12	0.02		ICPES	85JAR 02	
2.2	0.08		DCPES	81CAN 01	
2.56	0.13		ITNA	85SUN 01	
3.4			ITNA	84GLA 11	
<u>Zn (ug/g)</u>					
107	3		ICPES	84HIR 01	
120	8		DCPES	82SIN 01	
130	1		DCPES	81CAN 01	
139			AA	85GAU 04	
<u>Zr (ug/g)</u>					
270	12		DCPES	81CAN 01	
400			ITNA	84GLA 11	

TABLE 1647-1: COMPILED DATA FOR NBS SRM 1647 PRIORITY POLLUTANT POLYNUCLEAR AROMATIC HYDROCARBONS (IN ACETONITRILE)

COMPOUND	CAS #	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD
			Mean ± SD	Mean ± SD	(n)			
Acenaphthene	83329	mg/L	21.0 ± 0.4	---	---	---	---	---
Acenaphthylene	208968	mg/L	19.1 ± 0.2	---	---	---	---	---
Anthracene	120127	mg/L	3.29 ± 0.10	---	---	---	---	---
Benz[a]anthracene	56553	mg/L	5.03 ± 0.10	---	---	---	---	---
Benzo[b]fluoranthene	205992	mg/L	5.11 ± 0.10	---	---	---	---	---
	205992	ug/g	---	2.44 ± 0.13 (5)		2.34	2.34 - 2.65	HPLC
Benzo[k]fluoranthene	207089	mg/L	5.02 ± 0.10	---	---	---	---	---
	207089	ug/g	---	2.4 ± 0.7 (6)		2.42	1.22 - 3.17	HPLC
Benzo[ghi]perylene	191242	mg/L	4.01 ± 0.10	---	---	---	---	---
Benzo[a]pyrene	50328	mg/L	5.3 ± 0.1	---	---	---	---	---
Chrysene	218019	mg/L	4.68 ± 0.10	---	---	---	---	---
Dibenz[a,h]anthracene	53703	mg/L	3.68 ± 0.10	---	---	---	---	---
Fluoranthene	206440	mg/L	10.1 ± 0.2	---	---	---	---	---
Fluorene	86737	mg/L	4.92 ± 0.10	---	---	---	---	---
Indeno[1,2,3-cd]pyrene	193395	mg/L	4.06 ± 0.10	---	---	---	---	---
Naphthalene	91203	mg/L	22.5 ± 0.2	---	---	---	---	---
Perylene	198550	ug/g	---	< 0.1		---	---	HPLC
Phenanthrene	85018	mg/L	5.06 ± 0.10	---	---	---	---	---
Pyrene	129000	mg/L	9.84 ± 0.10	---	---	---	---	---

TABLE 1647-2: INDIVIDUAL DATA FOR NBS SRM 1647

Conc	Uncer	Com	Method	Reference
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Benzo[b]fluoranthene (ug/g)

1.04	12	HPLC	850TT 01
2.34	12	HPLC	850TT 01
2.34	12	HPLC	850TT 01
2.39	12	HPLC	850TT 01
2.47	12	HPLC	850TT 01
2.65	12	HPLC	850TT 01

Benzo[k]fluoranthene (ug/g)

1.22	12	HPLC	850TT 01
2.04	12	HPLC	850TT 01
2.42	12	HPLC	850TT 01
2.42	12	HPLC	850TT 01
2.86	12	HPLC	850TT 01
3.17	12	HPLC	850TT 01

Perylene (ug/g)

< 0.1	HPLC	850TT 01
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TABLE 1648-1: COMPILED DATA FOR NBS SRM 1648 URBAN PARTICULATE MATTER (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA	Mean ± SD (n)	NAA	Mean ± SD (n)	ICPES	Mean ± SD (n)	OTHER METHODS	
			Mean ± SD	n									SD (n)	Method
Ag	ug/g	6	6.1 ± 0.2	(5)	6.18	5.8 - 6.4	6.18	(1)	6.1 ± 0.3	(3)	---	---	6.0	(1) XRF
Al	%	3.42 ± 0.11	3.22 ± 0.16	(8)	3.12	3.05 - 3.5	3.18	(2)	3.26 ± 0.19	(4)	3.18	(2)	---	---
As	ug/g	115 ± 10	116 ± 3	(11)	117	112 - 119	114 ± 3	(3)	118 ± 1	(4)	116 ± 3	(4)	---	---
B	ug/g	---	3000 ?	(2)	---	158 - 6000	---	---	793 ± 50	(3)	774	(1)	158	(1) TCGS
Ba	ug/g	737	780 ± 40	(5)	774	740 - 840	---	---	793 ± 50	(3)	2.6 ± 0.4	(3)	757	(1) XRF
Be	ug/g	---	2.6 ± 0.4	(3)	2.5	2.3 - 3.0	---	---	503 ± 27	(5)	---	---	---	---
Br	ug/g	500	506 ± 25	(6)	504	460 - 526	---	503 ± 27	(5)	---	---	517	(1) XRF	
C	%	---	14.98	(2)	---	14.7 - 15.27	---	---	---	---	---	14.7	(1) CB	
Ca	%	---	5.83 ± 0.33	(8)	5.77	5.4 - 6.30	5.8 ± 0.4	(3)	5.8 ± 0.4	(3)	5.77	(1)	6.1	(1) XRF
Cd	ug/g	75 ± 7	72 ± 2	(13)	72	69 - 75	72 ± 2	(7)	70	(1)	73 ± 2	(4)	70	(1) XRF
Ce	ug/g	55	55 ± 4	(4)	53	52 - 61	---	53 ± 1	(3)	61	(1)	---	---	
Cl	ug/g	4500	4760 ± 230	(3)	4890	4500 - 4900	---	4760 ± 230	(3)	---	---	---	---	
Co	ug/g	18	17.4 ± 1.8	(7)	17.6	15 - 20	15.2	(1)	17.6 ± 0.4	(3)	18 ± 3	(3)	---	---
Cr	ug/g	403 ± 12	397 ± 14	(9)	398	380 - 417	393 ± 20	(3)	407 ± 5	(3)	391 ± 10	(3)	440	(1) XRF
Cs	ug/g	3	3.5 ± 0.2	(3)	3.4	3.3 - 3.73	---	3.5 ± 0.2	(3)	---	---	---	---	
Cu	ug/g	609 ± 27	600 ± 23	(17)	596	570 - 669	591 ± 5	(9)	669	(1)	630 ± 50	(4)	640 ± 60	(3) XRF
Eu	ug/g	0.8	0.85 ± 0.13	(3)	0.79	0.77 - 1.0	---	0.78	(2)	1.0	(1)	---	---	
Fe	%	3.91 ± 0.10	3.92 ± 0.24	(15)	3.9	3.43 - 4.50	3.7 ± 0.5	(8)	3.85 ± 0.04	(4)	3.9	(2)	4.00 ± 0.04	(3) XRF
Ga	ug/g	---	40 ?	(2)	---	8.3 - 72	---	8.3	(1)	72	(1)	---	---	
Gd	ug/g	---	3.4	(2)	---	3.1 - 3.7	---	---	---	---	3.4	(2)	TCGS	
H	%	---	2.23	(1)	---	---	---	---	---	---	2.23	(1)	CB	
Hf	ug/g	4.4	4.6 ± 0.5	(3)	4.47	4.2 - 5.2	---	4.6 ± 0.5	(3)	---	---	---	---	
I	ug/g	20	18 ± 2	(3)	19.2	16 - 20	---	20	(1)	---	16	(1)	XRF	
I	ug/g	---	---	---	---	---	---	---	---	---	19.2	(1)	ISE	
I-129	atom/g	---	1.65	(2)	---	1.5 - 1.8	---	1.8	(1)	---	---	---	---	
In	ng/g	1000	980	(1)	---	---	---	980	(1)	---	---	---	---	
K	%	1.05 ± 0.01	1.03 ± 0.05	(6)	1.01	0.96 - 1.11	---	1.03 ± 0.06	(5)	---	1.04	(1)	XRF	
La	ug/g	42	39 ± 3	(5)	40	35 - 42	---	40 ± 2	(4)	35	(1)	---	---	
Lu	ng/g	---	34	(1)	---	---	---	34	(1)	---	---	---	---	
Mg	ug/g	8000	7930 ± 650	(6)	7600	7200 - 9000	7580 ± 330	(4)	8300	(1)	9000	(1)	---	---
Mn	ug/g	860	822 ± 45	(19)	830	740 - 880	816 ± 41	(8)	793 ± 55	(5)	840	(2)	865	(2) XRF
Mo	ug/g	---	18.2 ± 1.9	(4)	17	17 - 21	---	21	(1)	18	(2)	17	(1) XRF	

TABLE 1648-1: COMPILED DATA FOR NBS SRM 1648 URBAN PARTICULATE MATTER (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA	Mean $\pm$ SD (n)	NAA	Mean $\pm$ SD (n)	ICPES	Mean $\pm$ SD (n)	OTHER METHODS		
			Mean $\pm$ SD	n											
N	%	3.08	3.25	(1)	---	---	---	---	---	---	---	3.25	(1) CB		
NH4-N	%	2.01	---	---	---	---	---	---	---	---	---	---	---		
NO3-N	%	1.07	---	---	---	---	---	---	---	---	---	---	---		
Na	ug/g	4250 $\pm$ 20	4230 $\pm$ 260	(4)	4100	4000 - 4600	---	4230 $\pm$ 260 (4)	---	---	---	---	---		
Nb	ug/g	---	22	(1)	---	---	---	---	---	---	---	22	(1) XRF		
Ni	ug/g	82 $\pm$ 3	82 $\pm$ 12	(15)	79.5	62 - 105	81 $\pm$ 12 (6)	75	(1)	74 $\pm$ 10 (4)	91	(2) XRF			
Ni	ug/g	---	---	---	---	---	---	---	---	---	84	(1) VOLT			
Pb	ug/g	6550 $\pm$ 80	6520 $\pm$ 250	(17)	6530	6100 - 7000	6420 $\pm$ 180 (9)	---	6710 $\pm$ 220 (4)	6660 $\pm$ 320 (3)	XRF	---	---		
Pr	ug/g	---	8.0	(1)	---	---	---	---	8.0	(1)	---	---	---		
Rb	ug/g	52	54.5 $\pm$ 2.6	(4)	53	52 - 58	---	54 $\pm$ 3 (4)	---	---	---	---	---		
S	%	5.0	5.21	(1)	---	---	---	---	---	---	---	---	---		
S04	%	15.42	---	---	---	---	---	---	---	---	---	---	---		
Sb	ug/g	45	44 $\pm$ 2 (5)	44	41 - 47	---	45 $\pm$ 2 (3)	41	(1)	44	(1) XRF	---	---		
Sc	ug/g	7	6.70 $\pm$ 0.12 (4)	6.6	6.6 - 6.8	---	6.7 $\pm$ 0.1 (4)	---	---	---	---	25	(1) XRF		
Se	ug/g	27 $\pm$ 1	24 $\pm$ 2 (6)	24.22	20 - 27	---	25 $\pm$ 2 (3)	23	(2)	14.7	(1) XRF	4.6	(2) TGS		
Si	%	12.5	13.0 $\pm$ 1.0 (6)	13.0	11.5 - 14.7	12.6 $\pm$ 0.8 (4)	13	(1)	---	---	147	(1) XRF			
Sm	ug/g	4.4	4.4 $\pm$ 0.3 (5)	4.4	4.0 - 4.8	---	4.2 $\pm$ 0.2 (3)	---	---	---	200	(2) XRF			
Sn	ug/g	---	147	(1)	---	---	---	---	---	---	---	---	---		
Sr	ug/g	---	207 $\pm$ 15 (3)	211	190 - 220	---	220	(1)	---	---	---	---	---		
Ta	ug/g	---	6.98	(2)	---	6.76 - 7.2	---	6.98	(2)	---	---	---	---		
Th	ug/g	7.4	7.6 $\pm$ 0.2 (3)	7.5	7.4 - 7.8	---	7.6 $\pm$ 0.2 (3)	---	---	---	4030	(2) XRF			
Ti	ug/g	4000	4070 $\pm$ 200 (9)	4000	3800 - 4500	4030 $\pm$ 120 (3)	4000 $\pm$ 500 (4)	4000	(1)	5.0	(1)	---	---		
U	ug/g	5.5 $\pm$ 0.1	5.5 $\pm$ 0.3 (4)	5.42	5.2 - 5.9	---	5.5 $\pm$ 0.3 (4)	---	122 $\pm$ 6 (5)	118 $\pm$ 12 (3)	2.0	(1)	---	---	
V	ug/g	140 $\pm$ 3	121 $\pm$ 8 (8)	119	106 - 130	---	4.2 $\pm$ 0.7 (3)	---	---	---	169	(1) XRF	---	---	
W	ug/g	4.8	4.2 $\pm$ 0.7 (3)	4.4	3.5 - 4.8	---	4.2 $\pm$ 0.7 (3)	---	---	---	---	---	---		
Y	ug/g	---	5.0	(1)	---	---	---	---	---	---	---	---	---		
Yb	ug/g	---	2.0	(1)	---	---	---	---	---	---	---	---	---		
Zn	ug/g	4760 $\pm$ 140	4740 $\pm$ 70 (21)	4740	4580 - 4890	4720 $\pm$ 70 (10)	4760 $\pm$ 60 (4)	4720 $\pm$ 40 (4)	4780 $\pm$ 120 (3)	4780 $\pm$ 120 (3)	4780 $\pm$ 120 (3)	169	(1) XRF	---	---
Zr	ug/g	---	169	(1)	---	---	---	---	---	---	---	---	---		

TABLE 1648-1: COMPILED DATA FOR NBS SRM 1648 URBAN PARTICULATE MATTER (cont.)

COMPOUND	CAS #	UNITS	NBS	CONSENSUS Mean $\pm$ SD	(n)	MEDIAN	RANGE	Mean (n)	Method	METHOD MEANS
Anthracene	120127	ng/g	---	335 2.9 $\pm$ 0.3	(2) (3)	---	310 - 360 2.8	310 (1) 2.7	GC-MS LC	360 (1) LC
1,2-Benzanthracene	56553	ug/g	---	6.15 3.1 $\pm$ 0.4	(2) (3)	---	5.5 - 6.8 3.3	3.0 (2) 6.8 (1) 3.0 (2)	LC GC-MS LC	2.7 (1) 5.5 (1) 3.3 (1)
Benz(g,h,i)perylene	191242	ug/g	---	6.8 3.35	(1) (2)	---	---	6.8 (1) 3.3 (2)	GC-MS LC	5.5 (1) 3.3 (1)
Benzo-a-pyrene	50328	ug/g	---	6.8 3.35	(1) (2)	---	---	6.8 (1) 3.35 (2)	GC-MS LC	6.8 (1) 3.35 (2)
Benzo-e-pyrene	192972	ug/g	---	6.6 6.6	(2) (2)	---	6.6 - 6.6 6.6 - 6.6	6.6 (2) 6.6 (2)	GC-MS LC	6.6 (2) 6.6 (2)
Benzo-k-fluoranthene	207089	ug/g	---	8.0 $\pm$ 0.6 4.7 $\pm$ 0.1	(3) (3)	7.9 4.7	7.4 - 8.7 4.6 - 4.8	8.3 (2) 4.75 (2)	GC-MS LC	7.4 (1) 4.6 (1)
Chrysene	218019	ug/g	---	620 $\pm$ 90 4.7	(3) (2)	650 6.8	520 - 690 4.6 - 4.8 6.1 - 7.4	670 (2) 4.8 (1) 6.1 (1) 7.1 (2)	GC-MS LC GC-MS LC	520 (1) 4.6 (1) 7.1 (2) LC
Fluoranthene	206440	ug/g	---	620 $\pm$ 90 4.7	(3) (2)	650 6.8	520 - 690 4.6 - 4.8 6.1 - 7.4	670 (2) 4.8 (1) 6.1 (1) 7.1 (2)	GC-MS LC GC-MS LC	520 (1) 4.6 (1) 7.1 (2) LC
Indeno(1,2,3-cd)pyrene	193395	ug/g	---	620 $\pm$ 90 4.7	(3) (2)	650 6.8	520 - 690 4.6 - 4.8 6.1 - 7.4	670 (2) 4.8 (1) 6.1 (1) 7.1 (2)	GC-MS LC GC-MS LC	520 (1) 4.6 (1) 7.1 (2) LC
Perylene	198550	ng/g	---	6.8 $\pm$ 0.6	(3)	6.8	6.1 - 7.4	6.1 (1)	GC-MS	7.1 (2)
Phenanthrene	85018	ug/g	---	---	---	---	---	---	---	---
Pyrene	129000	ug/g	---	---	---	---	---	---	---	---

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u><b>Anthracene (ng/g)</b></u>									
310			GC-MS	84SIM 03	4.6	0.3		LC	84MAY 01
360	10		LC	84MAY 01	4.8			GC-MS	84SIM 03
<u><b>1,2-Benzanthracene (ug/g)</b></u>									
2.7			GC-MS	84SIM 03	6.1			GC-MS	84SIM 03
2.8	0.1	44	LC	84MAY 01	6.8	0.2	44	LC	84MAY 01
3.2	0.1	44	LC	84MAY 01	7.4	0.2	44	LC	84MAY 01
<u><b>Benzo(g,h,i)perylene (ug/g)</b></u>									
5.5	0.8		LC	84MAY 01	5.8	0.9		IENA	84GLA 07
6.8			GC-MS	84SIM 03	6	1	D	XRF	79GIA 03
<u><b>Benzo-a-pyrene (ug/g)</b></u>									
2.6	0.2	44	LC	84MAY 01	6	1		XRF	77GIA 02
3.3			GC-MS	84SIM 03	6.18			FAA	83BLO 01
3.4	0.2	44	LC	84MAY 01	6.2			NAA	83BLO 01
<u><b>Benzo-e-pyrene (ug/g)</b></u>									
6.8			GC-MS	84SIM 03	6.4	0.5		ITNA	79GRE 01
<u><b>Benzo-k-fluoranthene (ug/g)</b></u>									
3.3	0.1	44	LC	84MAY 01	3.05	0.03		AA	81FRA 01
3.4	0.05	44	LC	84MAY 01	3.05	0.17		ICPES	84JEN 02
<u><b>Chrysene (ug/g)</b></u>									
6.6	0.1	44	LC	84MAY 01	3.1	0.1		ITNA	84GLA 07
6.6	0.2	44	LC	84MAY 01	3.12	0.2	35	ITNA	81GLA 03
<u><b>Fluoranthene (ug/g)</b></u>									
7.4			GC-MS	84SIM 03	3.3			ICPES	80FLO 01
7.9	0.6	44	LC	84MAY 01	3.3			ITNA	84TU 03
8.7	0.4	44	LC	84MAY 01	3.3	0.45		AA	81FAR 01
<u><b>Indeno(1,2,3-cd)pyrene (ug/g)</b></u>									
4.6			GC-MS	84SIM 03	3.5	0.1		ITNA	79GRE 01
4.7	0.2	44	LC	84MAY 01	<u><b>As (ug/g)</b></u>				
4.8	0.2	44	LC	84MAY 01	104	10		ICPES	84JEN 02
<u><b>Perylene (ng/g)</b></u>									
520			GC-MS	84SIM 03	112			ICPES	80FLO 01
650	20	44	LC	84MAY 01	112	2		AA	83BYR 01
690	20	44	LC	84MAY 01	113	12		FAA	83LOV 01
					117			ICPES	82NYG 01
					117			HAA	84YAM 01
					117	5		ITNA	79GRE 01
					117	5		ITNA	84GLA 07
					117	6	11	ICPES	84SCH 03
					119		35	NAA	81GLA 03
					119	2		IENA	84GLA 07
					119	2	11	ICPES	84SCH 03
					<u><b>B (ug/g)</b></u>				
					158	15		TCGS	84GLA 01
					6000	170		UU	81FRA 01

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ba (ug/g)</u>									
740	60		ITNA	79GRE 01	72	11	AA	82YAM 01	
757	35	D	XRF	79GIA 03	72	1	11	ICPES	84SCH 03
757	35		XRF	77GIA 02	73			ICPES	80FLO 01
774			ICPES	80FLO 01	74	2	AA	83BYR 01	
800	10	5	ITNA	84GLA 07	75	7	AA	84GLA 07	
840	40		IENA	84GLA 07	75	8	ICPES	84JEN 02	
980	100	5	ITNA	84GLA 07	105	9	AA	81FRA 01	
<u>Be (ug/g)</u>									
2.3	0.2	11	ICPES	84SCH 03	52	5	IENA	84GLA 07	
2.5	0.2	11	ICPES	84SCH 03	53	2	ITNA	84GLA 07	
3			ICPES	80FLO 01	54	3	ITNA	79GRE 01	
<u>Br (ug/g)</u>									
460	15	5	IENA	84GLA 07	500	60	35	ITNA	81GLA 03
500	30		ITNA	79GRE 01	4500	200		ITNA	79GRE 01
504	14	5	IENA	84GLA 07	4890	80		ITNA	84GLA 07
517	14	D	XRF	79GIA 03	4900			ITNA	84TU 03
517	14		XRF	77GIA 02					
526	24	35	ITNA	81GLA 03					
526	25		ITNA	84GLA 07					
<u>C (%)</u>									
					15	3	ICPES	84JEN 02	
14.7	0.3		CB	84GLA 07	15.2	0.9	AA	81FRA 01	
15.27	0.15		UU	81FRA 01	17.2	0.6	ITNA	84GLA 07	
<u>Ca (%)</u>									
5.4	0.3		IENA	84GLA 07	17.6	0.5	ITNA	79GRE 01	
5.5	0.4		AA	82GLA 02	18	1	IENA	84GLA 07	
5.6	0.4		AA	84GLA 07	19	2	11	ICPES	84SCH 03
5.77	0.38		ICPES	84JEN 02	20	3	11	ICPES	84SCH 03
5.8	0.5		ITNA	79GRE 01	28			ICPES	80FLO 01
6.1	0.04		EXRF	78PEL 01	42	7	35	ITNA	81GLA 03
6.18	0.23		AA	81FAR 01	173	27		FAA	81FAR 01
6.3	0.3		ITNA	84GLA 07	380	21		ICPES	84JEN 02
<u>Cd (ug/g)</u>									
					380	40	AA	84GLA 07	
64	7		AA	82GLA 02	383		AA	82GLA 02	
69	4		FAA	81FAR 01	396	6	11	ICPES	84SCH 03
70	2		XRF	77GIA 02	398			ICPES	80FLO 01
70	2	D	XRF	79GIA 03	402	10		ITNA	79GRE 01
70	6		ITNA	79GRE 01	410	8		ITNA	84GLA 07
71	2	11	ICPES	84SCH 03	410	50	35	ITNA	81GLA 03
72	11	AA	82YAM 01		417	16	AA	81FRA 01	
72	11	AA	82YAM 01		440	10		EXRF	78PEL 01
72	11	AA	82YAM 01		560	11	UU	81FRA 01	
					580	50	UU	81FRA 01	

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference	
<u>Cs (ug/g)</u>											
3.3	0.2	IENA	84GLA	07		8.3	0.4	IENA	84GLA	07	
3.4	0.2	ITNA	79GRE	01		72		ICPES	80FLO	01	
3.73	0.29	ITNA	84GLA	07							
<u>Ga (ug/g)</u>											
570	44	UU	81FRA	01		3.1	0.6	4	TCGS	85GLA	05
581	16	XRF	77GIA	02		3.7	0.4	4	TCGS	85GLA	05
585	11	AA	82YAM	01							
586	11	AA	83BYR	01							
586	22	FAA	81FAR	01							
589	12	AA	81FRA	01		2.23	0.04	CB	84GLA	07	
590	11	AA	82YAM	01							
590	11	AA	82YAM	01							
595	11	AA	82YAM	01							
596	24	AA	82GLA	02		4.2	0.3	ITNA	79GRE	01	
598		ICPES	80FLO	01		4.47	0.07	ITNA	84GLA	07	
600	30	AA	84GLA	07		5.2	0.4	IENA	84GLA	07	
603	7	11	ICPES	84SCH	03						
609	29	11	ICPES	84SCH	03						
610	18	UU	81FRA	01							
640	60	EXRF	81KIN	01		16	2	XRF	77GIA	02	
669		ITNA	84TU	03		16	2	D	XRF	79GIA	01
695	35	ICPES	84JEN	02		19.2	0.3	ISE	85COE	01	
700	100	EXRF	78PEL	01		20	5	ITNA	79GRE	01	
<u>Eu (ug/g)</u>											
0.77	0.03	ITNA	84GLA	07							
0.79	0.08	ITNA	79GRE	01		1.5	38	UU	83BPN	01	
1		ICPES	80FLO	01		1.8	0.6	38	RTNA	83LUT	01
<u>Fe (%)</u>											
3.0	11	AA	82YAM	01							
3.05	11	AA	82YAM	01							
3.43	0.05	AA	81FRA	01							
3.7		AA	82GLA	02							
3.7	0.25	ICPES	84JEN	02							
3.8	0.5	35	ITNA	81GLA	03						
3.84	0.08	ITNA	79GRE	01		0.96	0.12	ITNA	84GLA	07	
3.86	0.06	ITNA	84GLA	07		0.99	0.11	ITNA	79GRE	01	
3.9	11	AA	82YAM	01		1.01		ITNA	84TU	03	
3.9	11	AA	82YAM	01		1.04	0.02	EXRF	78PEL	01	
3.9	0.1	IENA	84GLA	07		1.07	0.02	IENA	84GLA	07	
3.96	0.037	EXRF	78PEL	01		1.11	0.08	35	ITNA	81GLA	03
4.0	0.1	EXRF	81KIN	01							
4.05	0.1	XRF	77GIA	02							
4.05	0.1	D	XRF	79GIA	03						
4.1		ICPES	80FLO	01		35		ICPES	80FLO	01	
4.2	0.4	AA	84GLA	07		38	3	35	ITNA	81GLA	07
4.5	0.23	AA	81FAR	01		40	2	ITNA	84GLA	07	
5.45	0.32	UU	81FRA	01		42	2	ITNA	79GRE	01	
5.65	0.14	UU	81FRA	01		42	5	IENA	84GLA	07	
<u>In (ng/g)</u>											
980						70		ITNA	79GRE	01	
<u>K (%)</u>											
0.96						0.12		ITNA	84GLA	07	
0.99						0.11		ITNA	79GRE	01	
1.01								ITNA	84TU	03	
1.04						0.02		EXRF	78PEL	01	
1.07						0.02		IENA	84GLA	07	
1.11						0.08	35	ITNA	81GLA	03	
<u>La (ug/g)</u>											
35											
38	3	35	ITNA								
40											
42											
42											

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u><u>Lu (ng/g)</u></u>										
34	3		ITNA	84GLA 07		22	3		XRF	77GIA 02
<u><u>Mg (ug/g)</u></u>										
5500			ITNA	84TU 03		62	6	11	ICPES	84SCH 03
7200	600		AA	82GLA 02		72	15		AA	82GLA 02
7500	400		AA	84GLA 07		74	5		ICPES	84JEN 02
7600	400		AA	81FAR 01		74.2		11	AA	82YAM 01
8000	130		AA	81FRA 01		75		11	AA	82YAM 01
8300	800		ITNA	79GRE 01		75	4		IENA	84GLA 07
9000			ICPES	80FLO 01		77	1	11	ICPES	84SCH 03
						79.5		11	AA	82YAM 01
						80.5		11	AA	82YAM 01
						83	4		EXRF	78PEL 01
740	30		IENA	84GLA 07		84			VOLT	84BRA 01
747	10		ITNA	84GLA 07		85			ICPES	80FLO 01
770		11	AA	82YAM 01		99	13		XRF	77GIA 02
770		11	AA	82YAM 01		100	7		UU	81FRA 01
790	20		ITNA	79GRE 01		105	21		AA	81FRA 01
790	80		AA	84GLA 07						
805	4		AA	81FRA 01						
810	40	35	ITNA	81GLA 03						
810	60		AA	81FAR 01		6100	200		AA	82GLA 02
830	40		ICPES	84JEN 02		6200	810		UU	81FRA 01
840	85		UU	81FRA 01		6210	85		FAA	81FAR 01
850		11	AA	82YAM 01		6300	100		XRF	77GIA 02
851			ICPES	80FLO 01		6300	300		AA	84GLA 07
852		11	AA	82YAM 01		6400	45		AA	81FRA 01
860	20		EXRF	81KIN 01		6510		11	AA	82YAM 01
870	30		EXRF	78PEL 01		6530		11	AA	82YAM 01
877			ITNA	84TU 03		6530	120	11	ICPES	84SCH 03
880	19		UU	81FRA 01		6550		11	AA	82YAM 01
880	80		AA	82GLA 02		6550	190	11	ICPES	84SCH 03
961	34		XRF	77GIA 02		6560	100		AA	83BYR 01
961	34	D	XRF	79GIA 03		6630		11	AA	82YAM 01
						6760	70		ICPES	84JEN 02
						6780	60		EXRF	78PEL 01
Mo (ug/g)						6900	200		EXRF	81KIN 01
17	2		XRF	77GIA 02		7000			ICPES	80FLO 01
17	2	11	ICPES	84SCH 03						
18	1	11	ICPES	84SCH 03						
21	2		IENA	84GLA 07						
<u><u>N (%)</u></u>										
3.25	0.04		CB	84GLA 07		8			ICPES	80FLO 01
<u><u>Na (ug/g)</u></u>										
4000	200		ITNA	79GRE 01		52	9		ITNA	79GRE 01
4100			ITNA	84TU 03		53	5		ITNA	84GLA 07
4220	120	5	ITNA	84GLA 07		55	6	35	ITNA	81GLA 03
4600	200	5	ITNA	84GLA 07		58	2		IENA	84GLA 07
5500	1500	35	ITNA	81GLA 03						

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>S (%)</u>									
5.21	0.06		UU	81FRA 01	190	10		EXRF	78PEL 01
<u>Sb (ug/g)</u>									
41			ICPES	82NYG 01	211	6		XRF	77GIA 02
44	3		XRF	77GIA 02	220	10		IENA	84GLA 07
44	3	D	XRF	79GIA 03	450			ICPES	80FLO 01
44	6		ITNA	84GLA 02	<u>Ta (ug/g)</u>				
45	3		ITNA	79GRE 01	6.76	0.17		ITNA	84GLA 07
47	2		ITNA	84GLA 07	7.2	0.4		IENA	84GLA 07
<u>Sc (ug/g)</u>									
6.6	0.2		ITNA	79GRE 01	7.4	0.3		ITNA	79GRE 01
6.6	0.6		ITNA	84GLA 02	7.5	0.5		ITNA	84GLA 07
6.8		35	ITNA	81GLA 03	7.8	0.4		IENA	84GLA 07
6.8	0.3		ITNA	84GLA 07	<u>Ti (ug/g)</u>				
<u>Se (ug/g)</u>									
4			ICPES	80FLO 01	3300			ITNA	84TU 03
20	6		ICPES	84JEN 02	3800	200		EXRF	81KIN 01
23.1	0.2	35	RTNA	81GLA 01	3900	800		AA	81FRA 01
24.22	0.25		RTNA	84DEL 01	4000			ICPES	80FLO 01
25	4		XRF	77GIA 02	4000	200		ITNA	79GRE 01
25	4	D	XRF	79GIA 03	4000	200		ITNA	84GLA 07
26			ICPES	82NYG 01	4100	300		AA	84GLA 07
27	2		ITNA	79GRE 01	4100	400		AA	82GLA 02
<u>Si (%)</u>									
11.5	2		AA	82GLA 02	4260	30		EXRF	78PEL 01
12.63	0.47		AA	81FRA 01	4500	400		IENA	84GLA 07
13	1.1		IENA	84GLA 07	4500			NAA	81GLA 03
13	2		AA	84GLA 07	49700				
13.3	1.1		AA	83FAR 01					
14.7	0.3		EXRF	78PEL 01					
<u>Sm (ug/g)</u>									
4	0.4		ITNA	79GRE 01	106			ICPES	80FLO 01
4.2	0.4	35	ITNA	81GLA 03	116	4		ITNA	84GLA 07
4.4	0.3		ITNA	84GLA 07	116	19	35	ITNA	81GLA 03
4.4	0.4	4	TCGS	85GLA 05	119	9	11	ICPES	84SCH 03
4.8	0.4	4	TCGS	85GLA 05	123	12		IENA	84GLA 07
<u>Sn (ug/g)</u>									
147	4		XRF	77GIA 02	127			ITNA	84TU 03
					130	2	11	ICPES	84SCH 03
					130	7		ITNA	79GRE 01

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference	
<u>W (ug/g)</u>					
3.5		35	RENA	81GLA 03	
4.4	2.8		IENA	84GLA 07	
4.8	0.6		ITNA	79GRE 01	
<u>Y (ug/g)</u>					
5			ICPES	80FLO 01	
<u>Yb (ug/g)</u>					
2			ICPES	80FLO 01	
<u>Zn (ug/g)</u>					
4300	550		UU	81FRA 01	
4400	60		UU	81FRA 01	
4580	160		AA	81FAR 01	
4650		11	AA	82YAM 01	
4650	150		EXRF	78PEL 01	
4670	35		ICPES	84JEN 02	
4670	70		AA	83BYR 01	
4700		11	AA	82YAM 01	
4700		11	AA	82YAM 01	
4700			ICPES	80FLO 01	
4700	200		ITNA	79GRE 01	
4740	30		AA	80EPS 01	
4740	130		IENA	84GLA 07	
4750		11	AA	82YAM 01	
4750	50		ITNA	84GLA 07	
4760	70	11	ICPES	84SCH 03	
4760	110	11	ICPES	84SCH 03	
4800			AA	82GLA 02	
4800	60		AA	81FRA 01	
4800	100		EXRF	81KIN 01	
4800	300		AA	84GLA 07	
4850	240	35	ITNA	81GLA 03	
4890	130	D	XRF	79GIA 03	
4890	130		XRF	77GIA 02	
<u>Zr (ug/g)</u>					
169	8		XRF	77GIA 02	

TABLE 1649-1: COMPILED DATA FOR NBS SRM 1649 URBAN DUST/ ORGANICS (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
				Mean ± SD	(n)			SD (n)	Mean ± SD (n)	Method
Anthracene	120127	ng/g	---	500	(1)	---	---	500	(1)	GC-MS
Benz[a]anthracene	565553	ug/g	2.6 ± 0.3	2.7 ± 0.3	(6)	2.7	2.4 - 3.3	2.63 ± 0.21	(3)	LC
	565553	ug/g	---	---	---	---	---	3.05	(2)	GC-MS
	565553	ug/g	---	---	---	---	---	2.4	(1)	GC
Benzo[b]fluoranthene	205992	ug/g	6.2	6.1	(2)	---	6.0 - 6.2	6.1	(2)	LC
Benzo[k]fluoranthene	207089	ug/g	2	2.03 ± 0.06	(3)	2.0	2.0 - 2.1	2.03 ± 0.06	(3)	LC
Benzo[ghi]perylene	191242	ug/g	4.5 ± 1.1	4.6 ± 0.5	(6)	4.4	3.9 - 5.2	4.7	(1)	GC
	191242	ug/g	---	---	---	---	---	4.7	(2)	GC-MS
	191242	ug/g	---	---	---	---	---	4.4 ± 0.7	(3)	LC
Benzo[a]pyrene	50328	ug/g	2.9 ± 0.5	2.6 ± 0.3	(6)	2.6	2.2 - 3.0	2.53 ± 0.12	(3)	LC
	50328	ug/g	---	---	---	---	---	2.5	(2)	GC-MS
Benzo[e]pyrene	192972	ug/g	3.3	3.5 ± 0.4	(4)	3.3	3.1 - 3.9	3.0	(1)	GC
	192972	ug/g	---	---	---	---	---	3.35	(2)	GC-MS
Chrysene	218019	ug/g	3.6	3.63 ± 0.15	(4)	3.7	3.5 - 4.6	3.9	(1)	GC
	218019	ug/g	---	---	---	---	---	3.3	(1)	GC
Dibenz[a,h]anthracene	53703	ng/g	410	430	(2)	---	410 - 450	430	(2)	LC
Fluoranthene	206440	ug/g	7.1 ± 0.5	7.08 ± 0.19	(6)	7.0	6.8 - 7.3	7.3	(1)	GC
	206440	ug/g	---	---	---	---	---	3.57 ± 0.12	(3)	LC
Indeno[1,2,3-cd]pryene	193395	ug/g	3.3 ± 0.5	3.52 ± 0.25	(6)	3.4	3.3 - 4.0	4.6	(1)	GC
	193395	ug/g	---	---	---	---	---	3.47 ± 0.12	(3)	LC
	193395	ug/g	---	---	---	---	---	3.7	(2)	GC-MS
Perylene	198550	ng/g	760	750 ± 120	(6)	740	570 - 900	730 ± 75	(3)	GC
	198550	ng/g	---	---	---	---	---	840	(1)	GC
Phenanthrene	85018	ug/g	4.5 ± 0.3	4.72 ± 0.18	(4)	4.7	4.5 - 4.9	4.6	(2)	LC
	85018	ug/g	---	---	---	---	---	4.85	(2)	GC-MS
Pyrene	129000	ug/g	6.6	6.2 ± 0.5	(6)	6.0	5.8 - 7.2	7.2	(1)	GC
	129000	ug/g	---	---	---	---	---	5.9	(2)	GC-MS
	129000	ug/g	---	---	---	---	---	6.17 ± 0.15	(3)	LC
Triphenylene	217594	ug/g	1.7	1.7	(1)	---	---	1.7	(1)	LC

TABLE 1649-1: COMPILED DATA FOR NBS SRM 1649 URBAN DUST/ ORGANICS (cont.)  
(revised 3/1/86)

ELEMENT	UNITS	NBS	ELEMENT	UNITS	NBS
Ag	ug/g	3.5	La	ug/g	33.3
As	ug/g	67	Mo	ug/g	14
Ba	ug/g	570	Rb	ug/g	47
Br	ug/g	1190	S	%	3.27
Cd	ug/g	18	Sb	ug/g	29.9
Ce	ug/g	51.6	Sc	ug/g	8.73
Cl	ug/g	2820	Se	ug/g	25.6
Co	ug/g	16.4	Sm	ug/g	4.71
Cr	ug/g	211	Sn	ug/g	56
Cs	ug/g	2.85	Th	ug/g	6.63
Eu	ug/g	0.87	U	ug/g	2.65
Fe	%	3.00	W	ug/g	3.8
Hf	ug/g	4.41	Zn	ug/g	1670

TABLE 1649-2: INDIVIDUAL DATA FOR NBS SRM 1649 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Anthracene (ng/g)</u>					<u>Dibenz[a,h]anthracene (ng/g)</u>				
500			GC-MS	84SIM 03	410	70	44	LC	84MAY 01
<u>Benz[a]anthracene (ug/g)</u>					450	40	44	LC	84MAY 01
2.4	0.1	44	LC	84MAY 01	<u>Fluoranthene (ug/g)</u>				
2.4	0.1		GC	84MAY 01	6.8	0.4	44	LC	84MAY 01
2.7	0.1	44	LC	84MAY 01	7			GC-MS	84SIM 03
2.8	0.2	44	LC	84MAY 01	7	0.5	44	LC	84MAY 01
2.8	1.1		GC-MS	85GRE 01	7.1	0.5	44	LC	84MAY 01
3.3			GC-MS	84SIM 03	7.3	0.2		GC	84MAY 01
<u>Benzo[b]fluoranthene (ug/g)</u>					7.3	2.7		GC-MS	85GRE 01
6	0.3	44	LC	84MAY 01	<u>Indeno[1,2,3-cd]pryene (ug/g)</u>				
6.2	0.3	44	LC	84MAY 01	3.3	0.3		GC	84MAY 01
<u>Benzo[k]fluoranthene (ug/g)</u>					3.4			GC-MS	84SIM 03
2	0.1	44	LC	84MAY 01	3.4	0.1	44	LC	84MAY 01
2	0.1	44	LC	84MAY 01	3.4	0.4	44	LC	84MAY 01
2.1	0.1	44	LC	84MAY 01	3.6	0.2	44	LC	84MAY 01
<u>Benzo[ghi]perylene (ug/g)</u>					4	9		GC-MS	85GRE 01
3.9	0.8	44	LC	84MAY 01	<u>Perylene (ng/g)</u>				
4.1	0.1	44	LC	84MAY 01	570			GC-MS	84SIM 03
4.4			GC-MS	84SIM 03	650	20	44	LC	84MAY 01
4.7	0.2		GC	84MAY 01	740	50	44	LC	84MAY 01
5	9		GC-MS	85GRE 01	800	40	44	LC	84MAY 01
5.2	0.6	44	LC	84MAY 01	840	90		GC	84MAY 01
<u>Benzo[a]pyrene (ug/g)</u>					900	100		GC-MS	85GRE 01
<u>Phenanthrene (ug/g)</u>					<u>Pyrene (ug/g)</u>				
2.2	1.4		GC-MS	85GRE 01	4.5	0.3	44	LC	84MAY 01
2.4	0.2	44	LC	84MAY 01	4.7	0.1	44	LC	84MAY 01
2.6	0.1	44	LC	84MAY 01	4.8			GC-MS	84SIM 03
2.6	0.4	44	LC	84MAY 01	4.9	1.3		GC-MS	85GRE 01
2.8			GC-MS	84SIM 03	<u>Chrysene (ug/g)</u>				
3	0.3		GC	84MAY 01	5.8			GC-MS	84SIM 03
<u>Benzo[e]pyrene (ug/g)</u>					6	0.2	44	LC	84MAY 01
3.1	1.8		GC-MS	85GRE 01	6	2.1		GC-MS	85GRE 01
3.3	0.2		GC	84MAY 01	6.2	0.2	44	LC	84MAY 01
3.6			GC-MS	84SIM 03	6.3	0.4	44	LC	84MAY 01
3.9	0.3		LC	84MAY 01	7.2	0.2		GC	84MAY 01
<u>Triphenylene (ug/g)</u>					<u>Chrysene (ug/g)</u>				
3.5	0.1	44	LC	84MAY 01	1.7	0.1		LC	84MAY 01
3.5	0.1	44	LC	84MAY 01	<u>Phenanthrene (ug/g)</u>				
3.7	0.2	44	LC	84MAY 01	4.5	0.3	44	LC	84MAY 01
3.8	1.1		GC-MS	85GRE 01	4.7	0.1		GC-MS	84SIM 03
4.6	0.2		GC	84MAY 01	4.8	1.3		GC-MS	85GRE 01

TABLE 1818-1: COMPILED DATA FOR NBS SRM 1818 CHLORINE IN LUBRICATING BASE OIL (revised 3/1/87)

ELEMENT	UNITS	NBS
		Mean ± SD
Cl-I	ug/g	29 ± 5
Cl-II	ug/g	63 ± 4
Cl-III	ug/g	78 ± 4
Cl-IV	ug/g	231 ± 6
Cl-V	ug/g	558 ± 11

TABLE 1819-1: COMPILED DATA FOR NBS SRM 1819 SULFUR IN LUBRICATING BASE OIL (revised 3/1/87)

ELEMENT	UNITS	NBS
		Mean ± SD
S-I	ug/g	299 ± 8
S-II	ug/g	1070 ± 40
S-III	ug/g	2865 ± 70
S-IV	ug/g	6030 ± 130
S-V	%	1.055 ± 0.026

TABLE 1880-1: COMPILED DATA FOR NBS SRMs 1880-1883 CEMENTS (revised 3/1/87)

ELEMENT	UNITS	SRM			
		1880 NBS	1881 NBS	1882 NBS	1883 NBS
Al	%	2.66	2.22	20.4	37.7
B	ug/g	< 100	< 100	---	---
Ba	ug/g	< 100	< 100	---	---
Ca	%	45.14	41.96	26.9	19.9
Cl	ug/g	200	< 100	---	---
Cr	ug/g	< 100	< 100	---	---
F	ug/g	1000	900	---	---
Fe	%	2.03	3.27	11.0	0.056
K	ug/g	7600	9710	1000	80
LOI	%	1.38	2.01	1.58	0.42
Mg	%	1.62	1.58	0.75	0.17
Mn	ug/g	560	1800	---	---
Na	ug/g	2100	300	440	2400
P	ug/g	1260	390	---	---
S	%	1.35	1.46	---	---
Si	%	9.26	10.39	1.59	0.16
Sr	ug/g	510	930	---	---
Ti	ug/g	1400	1400	11000	60
Zn	ug/g	80	80	---	---
Zr	ug/g	< 100	< 100	---	---

TABLE 2661-1: COMPILED DATA FOR NBS SRM 2661 BENZENE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS	CONSENSUS	METHOD
		Mean $\pm$ SD	Mean (n)	
I	ug/tube	14 $\pm$ 1	---	---
II	ug/tube	66 $\pm$ 3	---	---
III	ug/tube	258 $\pm$ 13	---	---
IV	ug/tube	994 $\pm$ 30	---	---

TABLE 2661A-1: COMPILED DATA FOR NBS SRM 2661A BENZENE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS	CONSENSUS	METHOD
		Mean $\pm$ SD	Mean (n)	
I	ug/tube	16 $\pm$ 1	---	---
II	ug/tube	30 $\pm$ 2	31 (1)	GC
III	ug/tube	54 $\pm$ 2	57.9 (1)	GC

TABLE 2662-1: COMPILED DATA FOR NBS SRM 2662 M-XYLENE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS	CONSENSUS	METHOD
		Mean $\pm$ SD	Mean (n)	
I	ug/tube	40 $\pm$ 2	---	---
II	ug/tube	293 $\pm$ 15	---	---
III	mg/tube	1.79 $\pm$ 0.09	---	---
IV	mg/tube	8.38 $\pm$ 0.38	---	---

TABLE 2663-1: COMPILED DATA FOR NBS SRM 2663 1,4-DIOXANE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS	CONSENSUS	METHOD
		Mean $\pm$ SD	Mean (n)	
I	ug/tube	16 $\pm$ 1	---	---
II	ug/tube	112 $\pm$ 6	---	---
III	mg/tube	0.996 $\pm$ 0.050	0.94 (1)	GC
IV	mg/tube	6.49 $\pm$ 0.20	---	---

TABLE 2661A-2: INDIVIDUAL DATA FOR NBS SRM 2661A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>Benzene-II (ug/tube)</u>				
31		GC	86GAU 01	
<u>Benzene-III (ug/tube)</u>				
57.9		GC	85GAU 04	

TABLE 2663-2: INDIVIDUAL DATA FOR NBS SRM 2663 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>1,4-Dioxane-III (mg/tube)</u>				
0.94	0.07	GC	86GAU 01	

TABLE 2664-1: COMPILED DATA FOR NBS SRM 2664 ETHYLENE CHLORIDE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS	CONSENSUS	METHOD
		Mean $\pm$ SD	Mean (n)	
I	ug/tube	98 $\pm$ 5	100 (1)	GC
II	ug/tube	381 $\pm$ 19	---	---
III	mg/tube	1.56 $\pm$ 0.08	1.6 (1)	GC
IV	mg/tube	5.8 $\pm$ 0.17	---	---

TABLE 2665-1: COMPILED DATA FOR NBS SRM 2665 CHLOROFORM ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS	CONSENSUS	METHOD
		Mean $\pm$ SD	Mean (n)	
I	ug/tube	147 $\pm$ 7	---	---
II	ug/tube	516 $\pm$ 26	510 (1)	GC
III	mg/tube	2.14 $\pm$ 0.1	---	---
IV	mg/tube	6.87 $\pm$ 0.21	---	---

TABLE 2666-1: COMPILED DATA FOR NBS SRM 2666 TRICHLOROETHYLENE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS	CONSENSUS	METHOD
		Mean $\pm$ SD	Mean (n)	
I	ug/tube	286 $\pm$ 14	---	---
II	mg/tube	1.03 $\pm$ 0.05	---	---
III	mg/tube	4.09 $\pm$ 0.20	5.3 (1)	GC
IV	mg/tube	15.4 $\pm$ 0.5	---	---

TABLE 2667-1: COMPILED DATA FOR NBS SRM 2667 CARBON TETRACHLORIDE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS	CONSENSUS	METHOD
		Mean $\pm$ SD	Mean (n)	
I	ug/tube	33 $\pm$ 3	---	---
II	ug/tube	114 $\pm$ 6	---	---
III	ug/tube	414 $\pm$ 21	580 (1)	GC
IV	mg/tube	1.58 $\pm$ 0.05	---	---

TABLE 2664-2: INDIVIDUAL DATA FOR NBS SRM 2664 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>Ethylene Chloride-I (ug/tube)</u>				
100		GC	86GAU 01	
<u>Ethylene Chloride-III (mg/tube)</u>				
1.6		GC	86GAU 01	

TABLE 2665-2: INDIVIDUAL DATA FOR NBS SRM 2665 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>Chloroform-II (ug/tube)</u>				
510		GC	86GAU 01	

TABLE 2666-2: INDIVIDUAL DATA FOR NBS SRM 2666 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>Trichloroethylene-III (mg/tube)</u>				
5.3		GC	86GAU 01	

TABLE 2667-2: INDIVIDUAL DATA FOR NBS SRM 2667 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<hr/>				
<u>Carbon tetrachloride-III (ug/tube)</u>				
580		GC	86GAU 01	

TABLE 2670-1: COMPILED DATA ON NBS SRM 2670 TRACE ELEMENTS IN URINE (revised 3/1/86)

SAMPLE	ELEMENT	UNITS	NBS	CONSENSUS	METHOD
			Mean ± SD	Mean (n)	
Entire pool	Dimethylsulfide	ug/L	---	2.73 (1)	GC
	Dimethyltin	ug/L	---	1.04 (1)	GC
	Butyltin	ug/L	---	0.03 (1)	GC
	Ca	mg/L	105 ± 5	---	---
	Cl	g/L	4.4	---	---
	K	g/L	1.5	---	---
	Mg	mg/L	63 ± 3	---	---
	Na	g/L	2.62 ± 0.14	---	---
	SO4	g/L	1.3	---	---
Normal	Al	ug/L	180	---	---
	As	ug/L	15	62 (1)	ICPES
	Be	ug/L	< 0.5	---	---
	Cd	ug/L	0.4	---	---
	Cr	ug/L	13	10 (1)	ICPES
	Cu	ug/L	130 ± 20	135 (1)	ICPES
	Hg	ug/L	20	---	---
	Mn	ug/L	30	24 (1)	ICPES
	Ni	ug/L	70	61 (1)	ICPES
	Pb	ug/L	10	---	---
	Pt	ug/L	< 10	---	---
	Se	ug/L	30 ± 8	37 (1)	ICPES
Elevated	Al	ug/L	180	---	---
	As	ug/L	480 ± 100	504 (1)	ICPES
	Be	ug/L	33	---	---
	Cd	ug/L	88 ± 3	85 (1)	ICPES
	Cr	ug/L	85 ± 6	75 (1)	ICPES
	Cu	ug/L	370 ± 30	359 (1)	ICPES
	Hg	ug/L	105 ± 8	---	---
	Mn	ug/L	330	310 (1)	ICPES
	Ni	ug/L	300	257 (1)	ICPES
	Pb	ug/L	109 ± 4	94 (1)	ICPES
	Pt	ug/L	110	---	---
	Se	ug/L	460 ± 30	475 (1)	ICPES

TABLE 2670-2: INDIVIDUAL DATA FOR NBS SRM 2670 Entire Pool (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>(Me)2S2 (ug/L)</u>				
2.73			GC	830LS 02
<u>(Me)2Sn (ug/L)</u>				
1.04			GC	830LS 02
<u>BuSn (ug/L)</u>				
0.03			GC	830LS 02

TABLE 2670N-2: INDIVIDUAL DATA FOR NBS SRM 2670 Normal Level (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>As (ug/L)</u>					<u>Mn (ug/L)</u>				
62	36	ICPES	85KIM 01		24	2.8		ICPES	85KIM 01
<u>Cr (ug/L)</u>					<u>Ni (ug/L)</u>				
10	3.3	ICPES	85KIM 01		61	13		ICPES	85KIM 01
<u>Cu (ug/L)</u>					<u>Se (ug/L)</u>				
135	12	ICPES	85KIM 01		37	31		ICPES	85KIM 01

TABLE 2670E-2: INDIVIDUAL DATA FOR NBS SRM 2670 Elevated Level (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>As (ug/L)</u>					<u>Mn (ug/L)</u>				
504	63	ICPES	85KIM 01		310	6		ICPES	85KIM 01
<u>Cd (ug/L)</u>					<u>Ni (ug/L)</u>				
85	3.8	ICPES	85KIM 01		257	25		ICPES	85KIM 01
<u>Cr (ug/L)</u>					<u>Pb (ug/L)</u>				
75	3.2	ICPES	85KIM 01		94	20		ICPES	85KIM 01
<u>Cu (ug/L)</u>					<u>Se (ug/L)</u>				
359	12	ICPES	85KIM 01		475	36		ICPES	85KIM 01

TABLE 2671-1: COMPILED DATA ON NBS SRM 2671 FLUORIDE IN URINE (revised 3/1/86)

SAMPLE	ELEMENT	UNITS	NBS	
			Mean	± SD
Normal	F	mg/L	0.835	± 0.082
Elevated	F	mg/L	7.14	± 0.48

TABLE 2672-1: COMPILED DATA ON NBS SRM 2672 MERCURY IN URINE (revised 3/1/86)

SAMPLE	ELEMENT	UNITS	NBS		CONSENSUS		METHOD
			Mean	± SD	Mean	(n)	
Entire pool	Butyltin	ug/L	---	---	1.5	(1)	GC
	Methyltin	ug/L			1.0	(1)	GC
	Sn	ug/L			28.1	(1)	GC
Normal	Hg	ug/L	49.8	± 4.2	---	---	---
Elevated	Hg	ug/L	294	± 24	---	---	---

TABLE 2762-2: INDIVIDUAL DATA FOR NBS SRM 2672 Entire Pool (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>BiSn (ug/L)</u>				
1.5			GC	83OLS 02
<u>MeSn (ug/L)</u>				
1			GC	83OLS 02
<u>Sn (ug/L)</u>				
28.1			GC	83OLS 02

TABLE 2674-1: COMPILED DATA FOR NBS SRM 2674 LEAD ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS	
		Mean	SD
Pb-Blank	ug/f	1.4	± 0.7
Pb-I	ug/f	100	± 3
Pb-II	ug/f	303	± 9
Pb-III	mg/f	1.505	± 0.028

TABLE 2675-1: COMPILED DATA FOR NBS SRM 2675 BERYLLIUM ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS Mean (n)	METHOD
		Mean	SD		
Be-I	ng/f	52	± 7	---	---
Be-II	ug/f	0.25	± 0.03	0.35 (1)	AA
Be-III	ug/f	1.0	± 0.1	---	---

TABLE 2675-2: INDIVIDUAL DATA FOR NBS SRM 2675 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
<u>Be-II (ug/filter)</u>				
0.35		AA		85GAU 04

TABLE 2676-1: COMPILED DATA FOR NBS SRM 2676 METALS ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS	
		Mean	SD
Cd-I	ng/f	500	± 40
Cd-II	ug/f	2.48	± 0.14
Cd-III	ug/f	10.1	± 0.4
Mn-I	ug/f	1.93	± 0.29
Mn-II	ug/f	10.3	± 1.5
Mn-III	ug/f	20.6	± 1.0
Pb-I	ug/f	6.8	± 1.1
Pb-II	ug/f	29	± 2.6
Pb-III	ug/f	102	± 6
Zn-I	ug/f	1.02	± 0.06
Zn-II	ug/f	5.1	± 0.26
Zn-III	ug/f	10.1	± 1.1

TABLE 2676A-1: COMPILED DATA FOR NBS SRM 2676A METALS ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS	METHOD
			Mean (n)	
Cd-Blank	ug/f	---	0.03 (1)	AA
Cd-I	ug/f	1.02 ± 0.03	---	---
Cd-II	ug/f	2.5 ± 0.02	2.47 (1)	AA
Cd-III	ug/f	10.18 ± 0.10	9.8 (1)	AA
Mn-I	ug/f	1.97 ± 0.06	---	---
Mn-II	ug/f	9.89 ± 0.1	---	---
Mn-III	ug/f	19.7 ± 0.3	---	---
Pb-Blank	ug/f	---	0.17 (1)	AA
Pb-I	ug/f	6.96 ± 0.2	---	---
Pb-II	ug/f	15.23 ± 0.15	15.6 (1)	AA
Pb-III	ug/f	29.64 ± 0.2	28.7 (1)	AA
Zn-Blank	ug/f	---	8.1 (1)	AA
Zn-I	ug/f	9.86 ± 0.28	---	---
Zn-II	ug/f	49.52 ± 0.48	47.6 (1)	AA
Zn-III	ug/f	99.22 ± 0.99	95 (1)	AA

TABLE 2676A-2: INDIVIDUAL DATA FOR NBS SRM 2676A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Cd-blank (ug/filter)</u>					<u>Pb-III (ug/filter)</u>				
0.03		AA	85GAU	04	28.7		AA	85GAU	04
<u>Cd-II (ug/filter)</u>					<u>Zn-blank (ug/filter)</u>				
2.47		AA	85GAU	04	8.1		AA	85GAU	04
<u>Cd-III (ug/filter)</u>					<u>Zn-II (ug/filter)</u>				
9.8		AA	85GAU	04	47.6		AA	85GAU	04
<u>Pb-blank (ug/filter)</u>					<u>Zn-III (ug/filter)</u>				
0.17		AA	85GAU	04	95		AA	85GAU	04
<u>Pb-II (ug/filter)</u>									
15.6		AA	85GAU	04					

TABLE 2676B-1: COMPILED DATA FOR NBS SRM 2676B METALS ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS
		Mean $\pm$ SD
Cd-Blank	ug/f	< 0.01
Cd-I	ug/f	0.99 $\pm$ 0.02
Cd-II	ug/f	2.49 $\pm$ 0.04
Cd-III	ug/f	10.14 $\pm$ 0.12
Mn-Blank	ug/f	< 0.01
Mn-I	ug/f	1.88 $\pm$ 0.03
Mn-II	ug/f	9.41 $\pm$ 0.13
Mn-III	ug/f	18.5 $\pm$ 0.3
Pb-Blank	ug/f	< 0.04
Pb-I	ug/f	7.55 $\pm$ 0.1
Pb-II	ug/f	14.9 $\pm$ 0.2
Pb-III	ug/f	30.4 $\pm$ 0.4
Zn-Blank	ug/f	0.4 $\pm$ 0.1
Zn-I	ug/f	10.01 $\pm$ 0.14
Zn-II	ug/f	49.7 $\pm$ 0.7
Zn-III	ug/f	99.5 $\pm$ 1.2

TABLE 2677-1: COMPILED DATA FOR NBS SRM 2677 BERYLLIUM AND ARSENIC ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS
		Mean $\pm$ SD
As-Blank	ng/f	< 2
As-I	ng/f	103 $\pm$ 5
As-II	ug/f	1.07 $\pm$ 0.05
As-III	ug/f	10.5 $\pm$ 0.5
Be-Blank	ng/f	< 1
Be-I	ng/f	52 $\pm$ 3
Be-II	ng/f	256 $\pm$ 13
Be-III	ug/f	1.03 $\pm$ 0.05

TABLE 2679-1: COMPILED DATA FOR NBS SRM 2679 QUARTZ ON FILTER MEDIA (revised 3/1/86)

MATERIAL	UNITS	NBS
		Mean $\pm$ SD
Clay-A	ug/f	400
Clay-B	ug/f	370
Clay-C	ug/f	320
Clay-D	ug/f	200
Quartz-A	ug/f	3.8 $\pm$ 0.5
Quartz-B	ug/f	29.9 $\pm$ 3.6
Quartz-C	ug/f	76.1 $\pm$ 9.1
Quartz-D	ug/f	193.2 $\pm$ 23.2

TABLE 2682-1: COMPILED DATA FOR NBS SRM 2682 SULFUR IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD		Mean ± SD	(n)			Mean ± SD	(n)	Method
ASH	%	6.37 ± 0.18		---		---	---	---		---
Ag	ng/g	---		< 1000		---	---	---		< 1000
Al	ug/g	4600		4290 ± 290 (3)		4140	4100 - 4620	4290 ± 290 (3)		NAA
As	ug/g	1		0.89 ± 0.16 (3)		0.96	0.7 - 1	0.89 ± 0.16 (3)		NAA
Au	ng/g	---		< 6		---	---	---		< 6
B	ug/g	39		39	(1)	---	---	39	(1)	TCGS
Ba	ug/g	382		361	(2)	---	340 - 382	361	(2)	NAA
Br	ug/g	3.7		3.5 ± 0.3 (3)		3.64	3.1 - 3.74	3.5 ± 0.3 (3)		NAA
C	%	75		76	(1)	---	---	76	(1)	TCGS
Ca	%	1.1		1.03	(1)	---	---	1.03	(1)	NAA
Ce	ug/g	10		9.87	(1)	---	---	9.87	(1)	NAA
Cl	ug/g	---		37	(1)	---	---	37	(1)	NAA
Co	ug/g	1.7		1.50	(2)	---	1.33 - 1.66	1.50	(2)	NAA
Cr	ug/g	15		15.2	(2)	---	15 - 15.4	15.2	(2)	NAA
Cs	ng/g	< 100		---		---	---	---		---
Dy	ug/g	---		0.6	(1)	---	---	0.6	(1)	NAA
Eu	ng/g	170		156	(2)	---	140 - 172	156	(2)	NAA
Fe	ug/g	2400		2260	(2)	---	2100 - 2420	2260	(2)	NAA
Ga	ug/g	---		< 6		---	---	< 6		---
H	%	4.7		4.7	(1)	---	---	4.7	(1)	TCGS
H2O-	%	18		---		---	---	---		---
HEAT	btu/lb	11800 ± 240		---		---	---	---		---
Hf	ng/g	600		565	(2)	---	530 - 600	565	(2)	NAA
K	ug/g	100		117	(1)	---	---	117	(1)	NAA
La	ug/g	5.2		4.4 ± 0.8 (3)		4.59	3.56 - 5.17	4.4 ± 0.8 (3)		NAA
Lu	ng/g	---		< 30		---	---	< 30		---
Mg	ug/g	2000		---		---	---	---		---
Mn	ug/g	26		22.2	(2)	---	21.8 - 22.6	22.2	(2)	NAA
Mo	ug/g	---		< 5		---	---	< 5		---
N	%	0.8		0.8	(1)	---	---	0.8	(1)	TCGS
Na	ug/g	1000		895	(2)	---	810 - 981	896	(2)	NAA
Rb	ug/g	< 2		---		---	---	---		---
S	ug/g	4700 ± 300		4700 ± 180 (5)		4670	4470 - 4940	4690 ± 110 (3)		CB
S	ug/g	---		---		---	---	4940	(1)	IDMS
S	ug/g	---		---		---	---	4470	(1)	TCGS
S-32/34	ratio	---		22.699	(1)	---	---	22.699	(1)	IDMS
S-33/34	ratio	---		0.1783	(1)	---	---	0.1783	(1)	IDMS
Sb	ng/g	190		189	(1)	---	---	189	(1)	NAA
Sc	ug/g	1.5		1.41	(2)	---	1.3 - 1.524	1.41	(2)	NAA
Se	ug/g	0.91		0.91	(1)	---	---	0.91	(1)	NAA
Sm	ng/g	780		704	(2)	---	633 - 776	704	(2)	NAA
Ta	ng/g	---		< 400		---	---	< 400		---
Tb	ng/g	---		< 100		---	---	< 100		---
Th	ug/g	1.5		1.43	(2)	---	1.33 - 1.532	1.43	(2)	NAA
Ti	ug/g	500		540	(1)	---	---	540	(1)	NAA
U	ng/g	520		490 ± 35 (3)		500	448 - 519	490 ± 35 (3)		NAA
V	ug/g	15		13.45	(2)	---	13 - 13.9	13.45	(2)	NAA
W	ug/g	1.8		1.46	(2)	---	1.1 - 1.81	1.46	(2)	NAA
Yb	ng/g	---		< 300		---	---	< 300		---
Zn	ug/g	8.6		8.6	(1)	---	---	8.6	(1)	NAA
Zr	ug/g	---		< 100		---	---	< 100		---

TABLE 2682-2: INDIVIDUAL DATA FOR NBS SRM 2682 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>										
<	1000		ITNA	86GLA 01		1.33	0.15	ITNA	86GLA 01	
1.66						1.66	0.03	ITNA	83LIN 02	
<u>Al (ug/g)</u>										
4100	200		ITNA	86GLA 01		15	0.8	ITNA	86GLA 01	
4140	120		ITNA	85GAU 04		15.4	0.3	ITNA	83LIN 02	
4620	20		ITNA	83LIN 02						
<u>As (ug/g)</u>										
0.7	0.3		ITNA	86GLA 01		0.6	0.2	ITNA	86GLA 01	
0.96	0.06		ITNA	85GAU 04						
1	0.02		ITNA	83LIN 02						
<u>Au (ng/g)</u>										
<	6		ITNA	86GLA 01		140	40	ITNA	86GLA 01	
						172	5	ITNA	83LIN 02	
<u>B (ug/g)</u>										
39	1.3		TCGS	83LIN 02		2100	200	ITNA	86GLA 01	
						2420	30	ITNA	83LIN 02	
<u>Ba (ug/g)</u>										
340	20		ITNA	86GLA 01		<	6	ITNA	86GLA 01	
382	5		ITNA	83LIN 02						
<u>Br (ug/g)</u>										
3.1	0.3		ITNA	86GLA 01		4.7	0.13	TCGS	83LIN 02	
3.64	0.19		ITNA	85GAU 04						
3.74	0.18		ITNA	83LIN 02						
<u>C (%)</u>										
76	3.8		TCGS	83LIN 02		530	40	ITNA	86GLA 01	
						600	20	ITNA	83LIN 02	
<u>Ca (%)</u>										
1.03	0.1		ITNA	86GLA 01		<	700	ITNA	86GLA 01	
						117	14	ITNA	83LIN 02	
<u>Ce (ug/g)</u>										
9.87	0.08		ITNA	83LIN 02		3.56	0.13	ITNA	86GLA 01	
						4.59	0.14	ITNA	85GAU 04	
						5.17	0.03	ITNA	83LIN 02	
<u>Cl (ug/g)</u>										
<	40		ITNA	86GLA 01						
37	4		ITNA	85GAU 04		<	30	ITNA	86GLA 01	
<u>Co (ug/g)</u>										
<u>Cr (ug/g)</u>										
<u>Dy (ug/g)</u>										
<u>Eu (ng/g)</u>										
<u>Fe (ug/g)</u>										
<u>Ga (ug/g)</u>										
<u>H (%)</u>										
<u>La (ug/g)</u>										
<u>Lu (ng/g)</u>										

TABLE 2682-2: INDIVIDUAL DATA FOR NBS SRM 2682 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mn (ug/g)</u>									
21.8	0.1	ITNA	86GLA 01		<	400		ITNA	86GLA 01
22.6	0.8	ITNA	85GAU 04						
<u>Mo (ug/g)</u>									
<	5	ITNA	86GLA 01		<	100		ITNA	86GLA 01
<u>N (%)</u>									
0.8	0.3	TCGS	83LIN 02		1.33	0.06	ITNA	86GLA 01	
					1.532	0.014	ITNA	83LIN 02	
<u>Na (ug/g)</u>									
810	30	ITNA	86GLA 01		540	200		ITNA	86GLA 01
981	12	ITNA	85GAU 04						
<u>S (ug/g)</u>									
4470	130	TCGS	83LIN 02		448	23	DNA	86GLA 01	
4600	200	CB	84GLA 11		500		DNA	86GAU 01	
4670	60	CB	86GAU 01		519	15	ITNA	83LIN 02	
4810	50	CB	85GLA 03						
4940	110	IDMS	84KEL 01						
<u>S-32/34 (ratio)</u>									
22.699		IDMS	84KEL 01						
<u>S-33/34 (ratio)</u>									
0.1783		IDMS	84KEL 01		1.1	0.3	ITNA	86GLA 01	
					1.81	0.03	ITNA	83LIN 02	
<u>Sb (ng/g)</u>									
<	150	ITNA	86GLA 01		<	300	ITNA	86GLA 01	
189	9	ITNA	83LIN 02						
<u>Sc (ug/g)</u>									
1.3	0.1	ITNA	86GLA 01		<	10	ITNA	86GLA 01	
1.524	0.005	ITNA	83LIN 02		8.6	0.9	ITNA	83LIN 02	
<u>Se (ug/g)</u>									
<	1	ITNA	86GLA 01		<	100	ITNA	86GLA 01	
0.91	0.1	ITNA	83LIN 02						
<u>Sm (ng/g)</u>									
633	16	ITNA	85GAU 04						
776	4	ITNA	83LIN 02						

TABLE 2683-1: COMPILED DATA FOR NBS SRM 2683 SULFUR IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS			
		Mean	SD	Mean	SD			Mean	SD	(n)	Method
ASH	%	6.85	± 0.02	---	---	---	---	---	---	---	---
Ag	ng/g	---		< 900		---	---	< 900		NAA	
Al	ug/g	8600		8590	(2)	---	8580 - 8600	8590	(2)	NAA	
As	ug/g	3.6		3.82	(2)	---	3.64 - 4	3.82	(2)	NAA	
Au	ng/g	---		< 5		---	---	< 5		NAA	
B	ug/g	67		67	(1)	---	---	67	(1)	TCGS	
Ba	ug/g	71		71	(1)	---	---	71	(1)	NAA	
Br	ug/g	17		17.3	(2)	---	16.85 - 17.8	17.3	(2)	NAA	
C	%	79		79	(1)	---	---	79	(1)	TCGS	
Ca	ug/g	2000		< 2000		---	---	< 2000		NAA	
Ce	ug/g	9		9.18	(1)	---	---	9.18	(1)	NAA	
Cl	ug/g	---		1100	(1)	---	---	1100	(1)	NAA	
Co	ug/g	2.2		2.24	(2)	---	2.22 - 2.26	2.24	(2)	NAA	
Cr	ug/g	11		11.3	(2)	---	11.02 - 11.5	11.26	(2)	NAA	
Cs	ug/g	0.4		0.44	(1)	---	---	0.44	(1)	NAA	
Dy	ng/g	---		< 700		---	---	< 700		NAA	
Eu	ng/g	180		178	(2)	---	177 - 180	178.5	(2)	NAA	
Fe	ug/g	7600		7760	(2)	---	7620 - 7900	7760	(2)	NAA	
Ga	ug/g	---		< 5		---	---	< 5		NAA	
H	%	5		5.0	(1)	---	---	5.0	(1)	TCGS	
H2O-	%	1.4		---		---	---	---			
HEAT	btu/lb	14060	± 60	---		---	---	---			
Hf	ng/g	420		409	(2)	---	400 - 418	409	(2)	NAA	
K	ug/g	800		750	(1)	---	---	750	(1)	NAA	
La	ug/g	5.1		4.6	(2)	---	4.2 - 5.05	4.62	(2)	NAA	
Lu	ng/g	---		60	(1)	---	---	60	(1)	NAA	
Mg	ug/g	500		---		---	---	---			
Mn	ug/g	13		11.8	(1)	---	---	11.8	(1)	NAA	
Mo	ug/g	---		< 3		---	---	< 3		NAA	
N	%	1.6		1.6	(1)	---	---	1.6	(1)	TCGS	
Na	ug/g	500		500	(1)	---	---	500	(1)	NAA	
Rb	ug/g	5.3		---		---	---	---			
S	%	1.85	± 0.06	1.89	± 0.05 (5)	1.90	1.82 - 1.95	1.91	± 0.04 (3)	CB	
S	%	---		---		---	---	1.90	(1)	IDMS	
S	%	---		---		---	---	1.82	(1)	TCGS	
S-32/34	ratio	---		22.364	(1)	---	---	22.364	(1)	IDMS	
S-33/34	ratio	---		0.1769	(1)	---	---	0.1769	(1)	IDMS	
Sb	ng/g	280		250	(2)	---	220 - 279	250	(2)	NAA	
Sc	ug/g	1.9		1.96	(2)	---	1.94 - 1.99	1.97	(2)	NAA	
Se	ug/g	1.2		1.22	(2)	---	1.2 - 1.23	1.22	(2)	NAA	
Sm	ug/g	0.86		0.86	(1)	---	---	0.86	(1)	NAA	
Ta	ng/g	---		< 300		---	---	< 300		NAA	
Tb	ng/g	---		< 300		---	---	< 300		NAA	
Th	ug/g	1.4		1.41	(2)	---	1.36 - 1.45	1.41	(2)	NAA	
Ti	ug/g	400		440	(1)	---	---	440	(1)	NAA	
U	ng/g	420		443	± 22 (3)	450	418 - 460	443	± 22 (3)	NAA	
V	ug/g	14		15.7	(1)	---	---	15.7	(1)	NAA	
W	ng/g	480		480	(1)	---	---	480	(1)	NAA	
Yb	ng/g	---		370	(1)	---	---	370	(1)	NAA	
Zn	ug/g	9.5		9.5	(1)	---	---	9.5	(1)	NAA	
Zr	ug/g	---		< 90		---	---	< 90		NAA	

TABLE 2683-2: INDIVIDUAL DATA FOR NBS SRM 2683 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>					<u>Cr (ug/g)</u>				
< 900		ITNA	86GLA 01		11.02	0.18	ITNA	83LIN 02	
					11.5	0.4	ITNA	86GLA 01	
<u>Al (ug/g)</u>					<u>Cs (ug/g)</u>				
8580	50	ITNA	83LIN 02		0.44	0.02	ITNA	83LIN 02	
8600	200	ITNA	86GLA 01						
<u>As (ug/g)</u>					<u>Dy (ng/g)</u>				
3.64	0.13	ITNA	83LIN 02		< 700		ITNA	86GLA 01	
4	0.1	ITNA	86GLA 01						
<u>Au (ng/g)</u>					<u>Eu (ng/g)</u>				
< 5		ITNA	86GLA 01		177	6	ITNA	83LIN 02	
					180	12	ITNA	86GLA 01	
<u>B (ug/g)</u>					<u>Fe (ug/g)</u>				
67	2	TCGS	83LIN 02		7620	190	ITNA	83LIN 02	
					7900	200	ITNA	86GLA 01	
<u>Ba (ug/g)</u>					<u>Ga (ug/g)</u>				
< 60		ITNA	86GLA 01		< 5		ITNA	86GLA 01	
71	3	ITNA	83LIN 02						
<u>Br (ug/g)</u>					<u>H (%)</u>				
16.85	0.04	ITNA	83LIN 02		5	0.1	TCGS	83LIN 02	
17.8	0.6	ITNA	86GLA 01						
<u>C (%)</u>					<u>Hf (ng/g)</u>				
79	4	TCGS	83LIN 02		400	70	ITNA	86GLA 01	
					418	4	ITNA	83LIN 02	
<u>Ca (ug/g)</u>					<u>K (ug/g)</u>				
< 2000		ITNA	86GLA 01		< 450		ITNA	86GLA 01	
					750	10	ITNA	83LIN 02	
<u>Ce (ug/g)</u>					<u>La (ug/g)</u>				
9.18	0.08	ITNA	83LIN 02		4.2	0.2	ITNA	86GLA 01	
<u>Cl (ug/g)</u>					5.05	0.04	ITNA	83LIN 02	
1100	100	ITNA	86GLA 01		<u>Lu (ng/g)</u>				
<u>Co (ug/g)</u>					60	7	ITNA	86GLA 01	
2.22	0.09	ITNA	83LIN 02		<u>Mn (ug/g)</u>				
2.26	0.04	ITNA	86GLA 01		11.8	0.2	ITNA	86GLA 01	

TABLE 2683-2: INDIVIDUAL DATA FOR NBS SRM 2683 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u><b>Mo (ug/g)</b></u>									
<	3		ITNA	86GLA 01	0.859	0.005		ITNA	83LIN 02
<u><b>N (%)</b></u>									
1.6	0.9		TCGS	83LIN 02	<	300		ITNA	86GLA 01
<u><b>Na (ug/g)</b></u>									
500	30		ITNA	86GLA 01	<	300		ITNA	86GLA 01
<u><b>S (%)</b></u>									
1.82	0.05		TCGS	83LIN 02	1.363	0.011		ITNA	83LIN 02
1.87	0.03		CB	84GLA 11	1.45	0.06		ITNA	86GLA 01
1.896	0.037		IDMS	84KEL 01	<u><b>Ti (ug/g)</b></u>				
1.91	0.03		CB	86GAU 01	440	90		ITNA	86GLA 01
1.95	0.04		CB	85GLA 03	<u><b>U (ng/g)</b></u>				
<u><b>S-32/34 (ratio)</b></u>									
22.364			IDMS	84KEL 01	418	11		ITNA	83LIN 02
<u><b>S-33/34 (ratio)</b></u>									
0.1769			IDMS	84KEL 01	450			DNA	86GAU 01
<u><b>Sb (ng/g)</b></u>									
220	20		ITNA	86GLA 01	460	40		DNA	86GLA 01
279	8		ITNA	83LIN 02	<u><b>V (ug/g)</b></u>				
<u><b>Sc (ug/g)</b></u>									
1.941	0.008		ITNA	83LIN 02	15.7	0.9		ITNA	86GLA 01
1.99	0.06		ITNA	86GLA 01	<u><b>W (ng/g)</b></u>				
<u><b>Se (ug/g)</b></u>									
1.2	0.2		ITNA	86GLA 01	480	30		ITNA	83LIN 02
1.23	0.09		ITNA	83LIN 02	<u><b>Yb (ng/g)</b></u>				
<u><b>Zn (ug/g)</b></u>									
370					370	60		ITNA	86GLA 01
<u><b>Zr (ug/g)</b></u>									
9.5					480	30		ITNA	83LIN 02
<					<	10		ITNA	86GLA 01
<					9.5	0.6		ITNA	83LIN 02
<					<	90		ITNA	86GLA 01

TABLE 2684-1: COMPILED DATA FOR NBS SRM 2684 SULFUR IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean	± SD	Mean	± SD			Mean	± SD	(n) Method
ASH	%	11.09	± 0.18	---	---	---	---	---	---	
Ag	ng/g	---		< 1200	---	---	---	< 1200		
Al	%	1.1		1.10	(2)	---	1.10 - 1.103	1.10	(2)	NAA
As	ug/g	3.9		3.92	(2)	---	3.87 - 3.96	3.92	(2)	NAA
Au	ng/g	---		< 5	---	---	---	< 5		
B	ug/g	114		114	(1)	---	---	114	(1)	TCGS
Ba	ug/g	41		41.4	(1)	---	---	41.4	(1)	NAA
Br	ug/g	11		10.4	(2)	---	10.2 - 10.6	10.4	(2)	NAA
C	%	68		68	(1)	---	---	68	(1)	TCGS
Ca	ug/g	4400		4800	(1)	---	---	4800	(1)	NAA
Ce	ug/g	12		11.5	(1)	---	---	11.5	(1)	NAA
Cl	ug/g	---		1050	(1)	---	---	1050	(1)	NAA
Co	ug/g	3.9		3.72	(2)	---	3.6 - 3.85	3.72	(2)	NAA
Cr	ug/g	17		16.6	(2)	---	16.4 - 16.8	16.6	(2)	NAA
Cs	ug/g	1.2		1.15	(1)	---	---	1.15	(1)	NAA
Dy	ug/g	---		0.96	(1)	---	---	0.96	(1)	NAA
Eu	ng/g	230		226	(2)	---	226 - 226	226	(2)	NAA
Fe	%	1.5		0.96	(2)	---	0.45 - 1.46	0.96	(2)	NAA
Ga	ug/g	---		< 5	---	---	---	< 5		
H	%	4.8		4.8	(1)	---	---	4.8	(1)	TCGS
H2O-	%	3.6		---	---	---	---	---		
HEAT	btu/lb	12760	± 200	---	---	---	---	---		
Hf	ng/g	570		568	(2)	---	565 - 570	568	(2)	NAA
K	ug/g	2000		1850	(2)	---	1730 - 1969	1850	(2)	NAA
La	ug/g	6.7		5.98	(2)	---	5.3 - 6.65	5.98	(2)	NAA
Lu	ng/g	---		74	(1)	---	---	74	(1)	NAA
Mg	ug/g	800		---	---	---	---	---		
Mn	ug/g	36		32	(1)	---	---	32	(1)	NAA
Mo	ug/g	---		< 4	---	---	---	< 4		
N	%	1.6		1.6	(1)	---	---	1.6	(1)	TCGS
Na	ug/g	300		240	(1)	---	---	240	(1)	NAA
Rb	ug/g	15		14.6	(1)	---	---	14.6	(1)	NAA
S	%	3.00	± 0.13	2.99	± 0.06 (4)	2.95	2.94 - 3.08	2.94	(1)	TCGS
S	%	---		---	---	---	---	2.96	(2)	CB
S	%	---		---	---	---	---	3.08	(1)	IDMS
S-32/34	ratio	---		22.726	(1)	---	---	22.726	(1)	IDMS
S-33/34	ratio	---		0.1782	(1)	---	---	0.1782	(1)	IDMS
Sb	ng/g	350		372	(2)	---	354 - 390	372	(2)	NAA
Sc	ug/g	2.7		2.64	(2)	---	2.62 - 2.66	2.64	(2)	NAA
Se	ug/g	1.9		1.82	(2)	---	1.77 - 1.87	1.82	(2)	NAA
Sm	ug/g	1.1		1.11	(1)	---	---	1.11	(1)	NAA
Ta	ng/g	---		< 300	---	---	---	< 300		
Tb	ng/g	---		< 200	---	---	---	< 200		
Th	ug/g	2		1.98	(2)	---	1.96 - 2.00	1.98	(2)	NAA
Ti	ug/g	600		580	(1)	---	---	580	(1)	NAA
U	ug/g	0.9		0.88	± 0.02 (3)	0.88	0.87 - 0.90	0.88	± 0.02 (3)	NAA
V	ug/g	22		22	(1)	---	---	22	(1)	NAA
W	ng/g	560		562	(1)	---	---	562	(1)	NAA
Yb	ng/g	---		510	(1)	---	---	510	(1)	NAA
Zn	ug/g	110		110	(2)	---	110 - 110	110	(2)	NAA
Zr	ug/g	---		< 120	---	---	---	< 120		

TABLE 2684-2: INDIVIDUAL DATA FOR NBS SRM 2684 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u><u>Ag (ng/g)</u></u>									
< 1200		ITNA	86GLA 01		16.4	0.9	ITNA	86GLA 01	
<u><u>Al (%)</u></u>									
1.1	0.04	ITNA	86GLA 01		16.8	0.3	ITNA	83LIN 02	
1.103	0.006	ITNA	83LIN 02						
<u><u>As (ug/g)</u></u>									
3.87	0.14	ITNA	83LIN 02		1.15	0.05	ITNA	83LIN 02	
3.96	0.14	ITNA	86GLA 01						
<u><u>Au (ng/g)</u></u>									
< 5	5	ITNA	86GLA 01		226	9	ITNA	83LIN 02	
					226	20	ITNA	86GLA 01	
<u><u>B (ug/g)</u></u>									
114	3	TCGS	83LIN 02		0.454	0.026	ITNA	83LIN 02	
					1.46	0.04	ITNA	86GLA 01	
<u><u>Ba (ug/g)</u></u>									
< 80	80	ITNA	86GLA 01		< 5	5	ITNA	86GLA 01	
41.4	2.6	ITNA	83LIN 02						
<u><u>Br (ug/g)</u></u>									
10.2	0.2	ITNA	86GLA 01		4.8	0.1	TCGS	83LIN 02	
10.6	0.5	ITNA	83LIN 02						
<u><u>C (%)</u></u>									
68	2	TCGS	83LIN 02		565	12	ITNA	83LIN 02	
					570	7	ITNA	86GLA 01	
<u><u>Ca (ug/g)</u></u>									
4800	400	ITNA	86GLA 01		1730	140	ITNA	86GLA 01	
					1969	16	ITNA	83LIN 02	
<u><u>Ce (ug/g)</u></u>									
11.5	0.2	ITNA	83LIN 02		La (ug/g)				
					5.3	0.13	ITNA	86GLA 01	
<u><u>Cl (ug/g)</u></u>									
1050	100	ITNA	86GLA 01		6.65	0.1	ITNA	83LIN 02	
<u><u>Co (ug/g)</u></u>									
3.6	0.2	ITNA	86GLA 01		Lu (ng/g)				
3.85	0.05	ITNA	83LIN 02		74	5	ITNA	86GLA 01	
<u><u>Cr (ug/g)</u></u>									
					Mn (ug/g)				
					32	0.2	ITNA	86GLA 01	

TABLE 2684-2: INDIVIDUAL DATA FOR NBS SRM 2684 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mo (ug/g)</u>									
<	4		ITNA	86GLA 01	<	200		ITNA	86GLA 01
<u>N (%)</u>									
1.6	0.4		TCGS	83LIN 02	1.955	0.016	ITNA	83LIN 02	
<u>Na (ug/g)</u>									
240	20		ITNA	86GLA 01	2	0.08	ITNA	86GLA 01	
<u>Rb (ug/g)</u>									
14.6	1.1		ITNA	83LIN 02	<u>Ti (ug/g)</u>				
<u>S (%)</u>									
2.94	0.07		TCGS	83LIN 02	580	60	ITNA	86GLA 01	
2.95	0.03		CB	86GAU 01	<u>U (ug/g)</u>				
2.98	0.08		CB	85GLA 03	0.87	0.02	DNA	86GLA 01	
3.076	0.09		IDMS	84KEL 01	0.88		DNA	86GAU 01	
<u>S-32/34 (ratio)</u>									
22.726			IDMS	84KEL 01	0.901	0.01	ITNA	83LIN 02	
<u>S-33/34 (ratio)</u>									
0.1782			IDMS	84KEL 01	<u>V (ug/g)</u>				
<u>Sb (ng/g)</u>									
354	8		ITNA	83LIN 02	22	4	ITNA	86GLA 01	
390	50		ITNA	86GLA 01	<u>W (ng/g)</u>				
<u>Sc (ug/g)</u>									
2.62	0.1		ITNA	86GLA 01	562	< 700	ITNA	86GLA 01	
2.665	0.02		ITNA	83LIN 02	562	22	ITNA	83LIN 02	
<u>Se (ug/g)</u>									
1.77	0.13		ITNA	86GLA 01	<u>Yb (ng/g)</u>				
1.87	0.16		ITNA	83LIN 02	510	50	ITNA	86GLA 01	
<u>Sm (ug/g)</u>									
1.109	0.012		ITNA	83LIN 02	110	11	ITNA	86GLA 01	
<u>Ta (ng/g)</u>									
<	300		ITNA	86GLA 01	110	12	ITNA	83LIN 02	

TABLE 2685-1: COMPILED DATA FOR NBS SRM 2685 SULFUR IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS		CONSENSUS			MEDIAN	RANGE	METHOD MEANS				
		Mean	± SD	Mean	± SD	(n)			Mean	± SD	(n)	Method	
ASH	%	16.53	± 0.15	---	---	---	---	---	---	---	---	NAA	
Ag	ng/g	---		< 1500	---	---	---	---	< 1500	---	---	NAA	
Al	%	1.7		1.66	(2)	---	1.64 - 1.67	1.65	(2)	1.65	(2)	NAA	
As	ug/g	12		12.6	(2)	---	12.3 - 12.9	12.6	(2)	12.6	(2)	NAA	
Au	ng/g	---		< 6	---	---	---	< 6	---	---	---	NAA	
B	ug/g	109		109	(1)	---	---	109	(1)	109	(1)	TCGS	
Ba	ug/g	105		105	(1)	---	---	105	(1)	105	(1)	NAA	
Br	ug/g	5.6		5.84	(2)	---	5.57 - 6.1	5.84	(2)	5.84	(2)	NAA	
C	%	66		66	(1)	---	---	66	(1)	66	(1)	TCGS	
Ca	ug/g	5200		5600	(1)	---	---	5600	(1)	5600	(1)	NAA	
Ce	ug/g	18		17.9	(1)	---	---	17.9	(1)	17.9	(1)	NAA	
Cl	ug/g	---		520	(1)	---	---	520	(1)	520	(1)	NAA	
Co	ug/g	4.6		4.58	(2)	---	4.57 - 4.6	4.58	(2)	4.58	(2)	NAA	
Cr	ug/g	22		22.4	(2)	---	22.3 - 22.6	22.4	(2)	22.4	(2)	NAA	
Cs	ug/g	1.3		1.31	(1)	---	---	1.31	(1)	1.31	(1)	NAA	
Dy	ug/g	---		1.35	(1)	---	---	1.35	(1)	1.35	(1)	NAA	
Eu	ng/g	360		344	(2)	---	330 - 357	344	(2)	344	(2)	NAA	
Fe	%	2.9		2.45	(2)	---	2.40 - 2.51	2.45	(2)	2.45	(2)	NAA	
Ga	ug/g	---		< 7	---	---	---	< 7	---	---	---	NAA	
H	%	4.6		4.6	(1)	---	---	4.6	(1)	4.6	(1)	TCGS	
H2O-	%	1.8		---	---	---	---	---	---	---	---		
HEAT	btu/lb	12100	± 180	---	---	---	---	---	---	---	---		
Hf	ug/g	0.91		0.93	(2)	---	0.913 - 0.94	0.93	(2)	0.93	(2)	NAA	
K	ug/g	2600		2421	(2)	---	2250 - 2592	2421	(2)	2421	(2)	NAA	
La	ug/g	10		9.4	(2)	---	8.6 - 10.2	9.4	(2)	9.4	(2)	NAA	
Lu	ng/g	---		116	(1)	---	---	116	(1)	116	(1)	NAA	
Mg	ug/g	1000		---	---	---	---	---	---	---	---		
Mn	ug/g	41		38	(1)	---	---	38	(1)	38	(1)	NAA	
Mo	ug/g	---		< 5	---	---	---	< 5	---	---	---	NAA	
N	%	1.1		1.1	(1)	---	---	1.1	(1)	1.1	(1)	TCGS	
Na	ug/g	800		755	(1)	---	---	755	(1)	755	(1)	NAA	
Rb	ug/g	17		16.8	(1)	---	---	16.8	(1)	16.8	(1)	NAA	
S	%	4.62	± 0.18	4.68	± 0.06	(4)	4.64	4.62 - 4.76	4.66	(2)	4.66	(2)	CB
S	%	---		---	---	---	---	---	4.64	(1)	4.64	(1)	TCGS
S	%	---		---	---	---	---	---	4.76	(1)	4.76	(1)	IDMS
S-32/34	ratio	---		22.546	(1)	---	---	---	22.546	(1)	22.546	(1)	IDMS
S-33/34	ratio	---		0.1777	(1)	---	---	---	0.1777	(1)	0.1777	(1)	IDMS
Sb	ng/g	360		363	(2)	---	357 - 370	363	(2)	363	(2)	NAA	
Sc	ug/g	3.7		3.72	(2)	---	3.7 - 3.73	3.72	(2)	3.72	(2)	NAA	
Se	ug/g	1.9		1.91	(1)	---	---	1.91	(1)	1.91	(1)	NAA	
Sm	ug/g	1.7		1.73	(1)	---	---	1.73	(1)	1.73	(1)	NAA	
Ta	ng/g	---		240	(1)	---	---	240	(1)	240	(1)	NAA	
Tb	ng/g	---		< 200	---	---	---	< 200	---	---	---	NAA	
Th	ug/g	2.7		2.66	(2)	---	2.65 - 2.66	2.66	(2)	2.66	(2)	NAA	
Ti	ug/g	900		910	(1)	---	---	910	(1)	910	(1)	NAA	
U	ug/g	0.95		0.957	± 0.012	(3)	0.952	0.948 - 0.97	0.957	± 0.012	(3)	NAA	
V	ug/g	31		31	(1)	---	---	31	(1)	31	(1)	NAA	
W	ug/g	1.2		1.18	(1)	---	---	1.18	(1)	1.18	(1)	NAA	
Yb	ng/g	---		660	(1)	---	---	660	(1)	660	(1)	NAA	
Zn	ug/g	17		17.1	(1)	---	---	17.1	(1)	17.1	(1)	NAA	
Zr	ug/g	---		< 150	---	---	---	< 150	---	---	---	NAA	

TABLE 2685-2: INDIVIDUAL DATA FOR NBS SRM 2685 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ag (ng/g)</u>									
< 1500		ITNA	86GLA	01	Cr (ug/g)				
<u>Al (%)</u>									
1.64	0.04	ITNA	86GLA	01	22.3	0.4	ITNA	83LIN	02
1.669	0.007	ITNA	83LIN	02	22.6	0.8	ITNA	86GLA	01
<u>As (ug/g)</u>									
12.28	0.38	ITNA	83LIN	02	Dy (ug/g)				
12.9	0.6	ITNA	86GLA	01	1.35	0.11	ITNA	86GLA	01
<u>Au (ng/g)</u>									
< 6		ITNA	86GLA	01	Eu (ng/g)				
<u>B (ug/g)</u>									
109	5	TCGS	83LIN	02	330	40	ITNA	86GLA	01
105	6	ITNA	83LIN	02	357	4	ITNA	83LIN	02
<u>Br (ug/g)</u>									
5.57	0.07	ITNA	83LIN	02	Fe (%)				
6.1	0.5	ITNA	86GLA	01	2.396	0.065	ITNA	83LIN	02
<u>C (%)</u>									
66	3	TCGS	83LIN	02	2.51	0.16	ITNA	86GLA	01
<u>Ca (ug/g)</u>									
5600	600	ITNA	86GLA	01	Ga (ug/g)				
<u>Ce (ug/g)</u>									
17.88	0.18	ITNA	83LIN	02	< 7		ITNA	86GLA	01
<u>Cl (ug/g)</u>									
520	40	ITNA	86GLA	01	H (%)				
<u>Co (ug/g)</u>									
4.57	0.06	ITNA	83LIN	02	4.6	0.2	TCGS	83LIN	02
4.6	0.2	ITNA	86GLA	01	Hf (ug/g)				
<u>Mn (ug/g)</u>									
116	30				0.913	0.011	ITNA	83LIN	02
38	1				0.94	0.005	ITNA	86GLA	01
<u>Lu (ng/g)</u>									
116	30				K (ug/g)				
38	1				2250	200	ITNA	86GLA	01
<u>Mn (ug/g)</u>									
2592	45				2592	45	ITNA	83LIN	02
<u>La (ug/g)</u>									
8.6	0.4				8.6	0.4	ITNA	86GLA	01
10.19	0.11				10.19	0.11	ITNA	83LIN	02
<u>Lu (ng/g)</u>									
116	30				116	30	ITNA	86GLA	01
38	1				Mn (ug/g)				
<u>Mn (ug/g)</u>									
38	1				38	1	ITNA	86GLA	01

TABLE 2685-2: INDIVIDUAL DATA FOR NBS SRM 2685 (cont.)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Mo (ug/g)</u>					<u>Tb (ng/g)</u>				
< 5		ITNA	86GLA 01		< 200		ITNA	86GLA 01	
<u>N (%)</u>					<u>Th (ug/g)</u>				
1.1	0.3	TCGS	83LIN 02		2.65	0.1	ITNA	86GLA 01	
<u>Na (ug/g)</u>					2.66	0.03	ITNA	83LIN 02	
755	50	ITNA	86GLA 01		<u>Ti (ug/g)</u>				
<u>Rb (ug/g)</u>					910	80	ITNA	86GLA 01	
16.8	1.3	ITNA	83LIN 02		<u>U (ug/g)</u>				
<u>S (%)</u>					0.948	0.013	ITNA	83LIN 02	
4.62	0.07	CB	85GLA 03		0.952	0.005	DNA	86GLA 01	
4.64	0.19	TCGS	83LIN 02		0.97		DNA	86GAU 01	
4.7	0.02	CB	86GAU 01		<u>V (ug/g)</u>				
4.76	0.19	IDMS	84KEL 01		31	1	ITNA	86GLA 01	
<u>S-32/34 (ratio)</u>					<u>W (ug/g)</u>				
22.546		IDMS	84KEL 01		< 1.5		ITNA	86GLA 01	
<u>S-33/34 (ratio)</u>					1.18	0.06	ITNA	83LIN 02	
0.1777		IDMS	84KEL 01		<u>Yb (ng/g)</u>				
<u>Sb (ng/g)</u>					660	120	ITNA	86GLA 01	
357	12	ITNA	83LIN 02		<u>Zn (ug/g)</u>				
370	30	ITNA	86GLA 01		< 10		ITNA	86GLA 01	
<u>Sc (ug/g)</u>					17.1	1.1	ITNA	83LIN 02	
3.7	0.019	ITNA	83LIN 02		<u>Zr (ug/g)</u>				
3.73	0.13	ITNA	86GLA 01		< 150		ITNA	86GLA 01	
<u>Se (ug/g)</u>									
< 3		ITNA	86GLA 01						
1.91	0.16	ITNA	83LIN 02						
<u>Sm (ug/g)</u>									
1.729	0.007	ITNA	83LIN 02						
<u>Ta (ng/g)</u>									
240	70	ITNA	86GLA 01						

TABLE 2689-1: COMPILED DATA FOR NBS SRMs 2689-2691 FLY ASH (revised 3/1/87)

ELEMENT	UNITS	NBS		
		2689	2690	2691
		Mean	Mean	Mean
Al	%	12.94	12.35	9.81
Ba	ug/g	800	6500	6600
Ca	%	2.18	5.71	18.45
Fe	%	9.32	3.57	4.42
H2O-	%	0.14	0.12	0.08
K	%	2.14	1.00	0.33
LOI	%	1.76	0.53	0.23
Mg	%	0.61	1.53	3.12
Mn	ug/g	300	300	200
Na	%	0.25	0.24	1.09
P	ug/g	1000	5200	5100
S	ug/g	---	1500	8300
Si	%	24.06	25.85	16.83
Sr	ug/g	700	2000	2700
Ti	ug/g	7500	5200	9000

TABLE 2694-1: COMPILED DATA FOR NBS SRM 2694 SIMULATED RAINWATER (revised 3/1/87)

PARAMETER	UNITS	NBS	
		I Mean $\pm$ SD	II Mean $\pm$ SD
Acidity	meq/L	0.050 $\pm$ 0.002	0.284 $\pm$ 0.005
Ca	ug/L	14 $\pm$ 3	49 $\pm$ 11
Cl	mg/L	0.24	1.0
Conductivity	uS/cm	26 $\pm$ 2	130 $\pm$ 2
F	ug/L	54 $\pm$ 2	98 $\pm$ 7
K	ug/L	52 $\pm$ 7	106 $\pm$ 8
Mg	ug/L	24 $\pm$ 2	51 $\pm$ 3
Na	ug/L	205 $\pm$ 9	419 $\pm$ 15
NH4-N	mg/L	---	1.0
NO3-N	mg/L	---	7.06 $\pm$ 0.15
pH	units	4.27 $\pm$ 0.03	3.59 $\pm$ 0.02
SO4	mg/L	2.75 $\pm$ 0.05	10.9 $\pm$ 0.2

TABLE 4350-1: COMPILED DATA FOR NBS SRM 4350 ENVIRONMENTAL RADIOACTIVITY STANDARD, RIVER SEDIMENT (revised 3/1/86)  
 (Activities shown as of 1 January 1975)

NUCLIDE	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD
		Mean	± SD	Mean	± SD (n)			
Ac-228	pCi/g	0.92	± 0.18	---	---	---	---	---
Ac-228	mBq/g	34	± 6.5	---	---	---	---	---
Am-241	pCi/g	0.0084		< 0.007	---	---	---	GAMMA
Am-241	mBq/g	0.314		---	---	---	---	---
Bi-212	mBq/g	50		---	---	---	---	---
Bi-212	pCi/g	1.4		---	---	---	---	---
Bi-214	mBq/g	34		---	---	---	---	---
Bi-214	pCi/g	0.92		---	---	---	---	---
Cm-244	mBq/g	0.0015		---	---	---	---	---
Co-60	pCi/g	4.00	± 0.22	---	---	---	---	---
Co-60	mBq/g	148	± 8	---	---	---	---	---
Cs-137	pCi/g	2.7	± 0.12	2.83	± 0.30 (4)	2.7	2.5 - 3.18	GAMMA
Cs-137	mBq/g	100	± 4.5	---	---	---	---	---
Eu-152	pCi/g	6.5	± 0.38	7.11	(1)	---	---	GAMMA
Eu-152	mBq/g	240	± 14	---	---	---	---	---
Eu-154	pCi/g	1.4	± 0.1	1.17	(1)	---	---	GAMMA
Eu-154	mBq/g	52	± 4	---	---	---	---	---
Eu-155	pCi/g	0.38		---	---	---	---	---
Eu-155	mBq/g	14		---	---	---	---	---
Fe-55	pCi/g	43		---	---	---	---	---
Fe-55	mBq/g	1600		---	---	---	---	---
I	ng/g	---		5400	(1)	---	---	NAA
I-129	FCI/G	---		0.032	(1)	---	---	NAA
K-40	pCi/g	14.6	± 1.3	15.2	(1)	---	---	GAMMA
K-40	mBq/g	540	± 50	---	---	---	---	---
Mn-54	pCi/g	0.057	± 0.007	---	---	---	---	---
Mn-54	mBq/g	2.1	± 0.2	---	---	---	---	---
Pa-231	pCi/g	0.047		---	---	---	---	---
Pa-231	mBq/g	1.75		---	---	---	---	---
Pb-212	pCi/g	1.6		---	---	---	---	---
Pb-212	mBq/g	60		---	---	---	---	---
Pb-214	pCi/g	1.1		---	---	---	---	---
Pb-214	mBq/g	41		---	---	---	---	---
Pu-238	pCi/g	0.002		---	---	---	---	---
Pu-238	mBq/g	0.067		---	---	---	---	---
Pu-239	pCi/g	0.038	± 0.003	0.033	(1)	---	---	AS
Pu-239	mBq/g	1.4	± 0.12	---	---	---	---	---
Ra-226	pCi/g	0.84		---	---	---	---	---
Ra-226	mBq/g	31		---	---	---	---	---
Sb-125	pCi/g	0.095		---	---	---	---	---
Sb-125	mBq/g	3.5		---	---	---	---	---
Sr-90	pCi/g	0.278	± 0.042	---	---	---	---	---
Sr-90	mBq/g	10.3	± 1.6	---	---	---	---	---
Th-228	pCi/g	1.07		---	---	---	---	---
Th-228	mBq/g	39.5		---	---	---	---	---
Th-230	pCi/g	0.988		---	---	---	---	---
Th-230	mBq/g	36.6		---	---	---	---	---

TABLE 4350-1: COMPILED DATA FOR NBS SRM 4350 ENVIRONMENTAL RADIOACTIVITY STANDARD, RIVER SEDIMENT (cont.)

NUCLIDE	UNITS	NBS		CONSENSUS		MEDIAN	RANGE	METHOD
		Mean	± SD	Mean	± SD (n)			
Th-232	pCi/g	0.84		---	---	---	---	---
Th-232	mBq/g	34.4		---	---	---	---	---
Tl-208	pCi/g	0.38		---	---	---	---	---
Tl-208	mBq/g	14		---	---	---	---	---
U	ug/g	---		0.9	(1)	---	---	NAA
U-234	pCi/g	1.34		---	---	---	---	---
U-234	mBq/g	49.6		---	---	---	---	---
U-235	pCi/g	0.05		---	---	---	---	---
U-235	mBq/g	1.85		---	---	---	---	---
U-238	pCi/g	1.14		---	---	---	---	---
U-238	mBq/g	42.2		---	---	---	---	---
Zn-65	pCi/g	0.35 ± 0.047		---	---	---	---	---
Zn-65	mBq/g	13 ± 1.8		---	---	---	---	---

TABLE 4350-2: INDIVIDUAL DATA FOR NBS SRM 4350 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Am-241 (pCi/g)</u>					<u>I (ng/g)</u>				
<	0.007		GAMMA	86GAU 01	5400	5000		RTNA	79BRA 01
<u>Cs-137 (pCi/g)</u>					<u>I-129 (fCi/g)</u>				
2.5	0.35		GAMMA	84GLA 02	0.032	0.037		RTNA	79BRA 01
2.7	0.2		GAMMA	86GAU 01	<u>K-40 (pCi/g)</u>				
2.95	0.18		GAMMA	85GAU 04	15.2			GAMMA	86GAU 01
3.18			GAMMA	84GLA 11	<u>Pu-239 (pCi/g)</u>				
<u>Eu-152 (pCi/g)</u>					0.033	0.001		AS	81CAR 01
<u>Eu-154 (pCi/g)</u>					<u>U (ug/g)</u>				
7.11			GAMMA	84GLA 11	0.9			DNA	84GLA 11
1.17			GAMMA	84GLA 11					

TABLE 4350B-1: COMPILED DATA FOR NBS SRM 4350B ENVIRONMENTAL RADIOACTIVITY, RIVER SEDIMENT (revised 3/1/86)  
 (Activity as of 9 September 1981)

NUCLIDE	UNITS	NBS		CONSENSUS			MEDIAN	RANGE	METHOD
		Mean ±	SD	Mean ±	SD	(n)			
Ac-228	pCi/g	---		1.2	(1)		---	---	GAMMA
Am-241	pCi/g	0.0040 ± 0.0008		0.005	(1)		---	---	AS
Am-241	mBq/g	0.15 ± 0.03		---			---	---	
Co-60	pCi/g	0.125 ± 0.006		0.12	(2)		---	0.11 - 0.13	GAMMA
Co-60	mBq/g	4.64 ± 0.23		---			---	---	
Cs-137	pCi/g	0.783 ± 0.049		0.842 ± 0.070	(5)		0.81	0.79 - 0.96	GAMMA
Cs-137	mBq/g	29.0 ± 1.8		---			---	---	
Eu-152	pCi/g	0.824 ± 0.033		1.16	(1)		---	---	GAMMA
Eu-152	mBq/g	30.5 ± 1.2		---			---	---	
Eu-154	pCi/g	0.102 ± 0.015		< 0.3			---	---	GAMMA
Eu-154	mBq/g	3.78 ± 0.57		---			---	---	
Fe-55	pCi/g	0.46		---			---	---	
Fe-55	mBq/g	17		---			---	---	
K-40	pCi/g	15		15.13	(1)		---	---	GAMMA
K-40	mBq/g	560		---			---	---	
Pu-238	FCI/G	0.35 ± 0.06		0.2	(1)		---	---	AS
Pu-238	mBq/g	0.013 ± 0.002		---			---	---	
Pu-239	pCi/g	0.0137 ± 0.0008		0.0133	(2)		---	0.0116 - 0.0150	AS
Pu-239	mBq/g	0.508 ± 0.029		---			---	---	
Ra-226	pCi/g	0.967 ± 0.097		1.99	(1)		---	---	GAMMA
Ra-226	mBq/g	35.8 ± 3.6		---			---	---	
Sr-90	pCi/g	0.14		---			---	---	
Sr-90	mBq/g	5.3		---			---	---	
Th-228	pCi/g	0.904		1.03	(1)		---	---	AS
Th-228	mBq/g	33.5		---			---	---	
Th-230	pCi/g	0.796		0.735	(2)		---	0.67 - 0.8	AS
Th-230	mBq/g	29.5		---			---	---	
Th-232	pCi/g	0.896		1.07	(1)		---	---	AS
Th-232	mBq/g	33.2		---			---	---	
U	ug/g	---		2.43	(1)		---	---	NAA
U-234	pCi/g	0.896		---			---	---	
U-234	mBq/g	33.2		---			---	---	
U-235	pCi/g	0.046		---			---	---	
U-235	mBq/g	1.7		---			---	---	
U-238	pCi/g	0.832		---			---	---	
U-238	mBq/g	30.8		---			---	---	

TABLE 4350B-2: INDIVIDUAL DATA FOR NBS SRM 4350B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ac-228 (pCi/g)</u>									
1.2	0.43		GAMMA	83KIM 01	<	10		RAS	86GAU 01
<u>Am-241 (pCi/g)</u>									
< 0.006			GAMMA	86GAU 01	0.2	0.8		AS	84GLA 02
0.005			AS	84GLA 02	0.0116	0.0025		AS	84GLA 02
<u>Co-60 (pCi/g)</u>									
0.11	0.03		GAMMA	84KRI 01	0.015			RAS	86GAU 01
0.13	0.01		GAMMA	82JEN 03	1.99	0.21		GAMMA	84KRI 01
<u>Cs-137 (pCi/g)</u>									
0.79	0.08		GAMMA	86GAU 01	1.03	0.03		AS	85JOS 01
0.8	0.1		GAMMA	85GAU 04	0.8			AS	84GLA 02
0.81	0.01		GAMMA	84KRI 01	0.67	0.05		GAMMA	85JOS 01
0.85	0.08		GAMMA	84GLA 02	1.07	0.06		AS	85JOS 01
0.96	0.12		GAMMA	84GLA 11	2.43	0.05		DNA	85GAU 04
<u>Eu-152 (pCi/g)</u>									
1.16	0.12		GAMMA	84GLA 11					
<u>Eu-154 (pCi/g)</u>									
< 0.3			GAMMA	84GLA 11					
<u>K-40 (pCi/g)</u>									
15.13	0.63		GAMMA	84KRI 01					

TABLE 4351-1: COMPILED DATA FOR NBS SRMs 4351 and 4352 ENVIRONMENTAL RADIOACTIVITY  
 (Human Lung and Human Liver)

ELEMENT	UNITS	NBS	
		4351 (lung) Mean $\pm$ SD	4352 (liver) Mean $\pm$ SD
Am-241	mBq/g	0.11	0.15 $\pm$ 0.06
Am-241	pCi/g	0.003	0.0040 $\pm$ 0.0015
Pu-238	mBq/g	---	0.055 $\pm$ 0.024
Pu-238	pCi/g	---	0.0015 $\pm$ 0.0006
Pu-238/239 ratio		0.0150 $\pm$ 0.0030	---
Pu-239	mBq/g	1.1 $\pm$ 1.2	2.06 $\pm$ 0.39
Pu-239	pCi/g	0.0030 $\pm$ 0.0003	0.0556 $\pm$ 0.0106
Th-228	mBq/g	0.22	0.51
Th-228	pCi/g	0.0059	0.014
Th-230	mBq/g	0.2	0.2
Th-230	pCi/g	0.0054	0.0054
Th-232	mBq/g	0.21 $\pm$ 0.03	0.058
Th-232	pCi/g	0.0057 $\pm$ 0.0007	0.0016
U-234	mBq/g	0.10 $\pm$ 0.025	0.1
U-234	pCi/g	0.0027 $\pm$ 0.0007	0.0027
U-235	mBq/g	---	0.009
U-235	pCi/g	---	0.0002
U-238	mBq/g	0.100 $\pm$ 0.011	0.088
U-238	pCi/g	0.0027 $\pm$ 0.0003	0.0024

TABLE 4353-1: COMPILED DATA FOR NBS SRM 4353 ENVIRONMENTAL RADIOACTIVITY - ROCKY FLATS SOIL #1 (revised 3/1/86)  
 (Activity as of 15 Dec. 1980)

ELEMENT	UNITS	NBS		CONSENSUS		RANGE		METHOD MEANS		
		Mean ± SD	n	Mean ± SD	(n)	Median		Mean ± SD	(n)	Method
Ac-228	mBq/g	69.8 ± 3.6	---	---	---	---	---	---	---	
Ac-228	pCi/g	1.88 ± 0.10	(1)	2.48	(1)	---	---	2.48	(1)	GAMMA
Am-241	mBq/g	1.25 ± 0.09	---	---	---	---	---	---	---	
Am-241	pCi/g	0.0338 ± 0.0025	0.035 ± 0.008 (4)	0.0350	0.024 - 0.042	0.024	0.039 ± 0.004 (3)	0.024	0.024	AS
Am-241	pCi/g	---	---	---	---	---	---	0.024	(1)	GAMMA
Cs-137	mBq/g	17.6 ± 0.8	---	---	---	---	---	---	---	
Cs-137	pCi/g	0.464 ± 0.021	0.56 ± 0.08 (4)	0.52	0.48 - 0.67	0.48	0.5575 ± 0.0818 (4)	0.0818	0.0818	GAMMA
Fe-55	mBq/g	2.49	---	---	---	---	---	---	---	
Fe-55	pCi/g	0.0670	---	---	---	---	---	---	---	
K-40	mBq/g	723 ± 70	---	---	---	---	---	---	---	
K-40	pCi/g	19.5 ± 1.9	25	(1)	---	---	25	(1)	25	GAMMA
Pu-238	mBq/g	0.166 ± 0.018	---	---	---	---	---	---	---	
Pu-238	pCi/g	0.0045 ± 0.0005	0.0038	(2)	---	0.0035 - 0.0040	0.0038	0.0038	(2)	AS
Pu-239	mBq/g	8.03 ± 0.60	---	---	---	---	---	---	---	
Pu-239	pCi/g	0.217 ± 0.016	0.214 ± 0.008 (7)	0.212	0.202 - 0.221	0.202	0.214 ± 0.008 (7)	0.008	0.008	AS
Ra-226	mBq/g	43.0 ± 2.8	---	---	---	---	---	---	---	
Ra-226	pCi/g	1.16 ± 0.08	1.03	(1)	---	---	1.03	(1)	1.03	GAMMA
Sr-90	mBq/g	7.63 ± 0.78	---	---	---	---	---	---	---	
Sr-90	pCi/g	0.206 ± 0.021	---	---	---	---	---	---	---	
Th-228	mBq/g	70.8 ± 3.6	---	---	---	---	---	---	---	
Th-228	pCi/g	1.91 ± 0.1	1.97	(1)	---	---	1.97	(1)	1.97	AS
Th-230	mBq/g	44.3 ± 2.3	---	---	---	---	---	---	---	
Th-230	pCi/g	1.20 ± 0.06	1.04	(2)	---	0.88 - 1.2	1.04	(2)	1.04	AS
Th-232	mBq/g	69.3 ± 3.5	---	---	---	---	---	---	---	
Th-232	pCi/g	1.87 ± 0.10	1.93	(1)	---	---	1.93	(1)	1.93	AS
U	ug/g	---	---	3.04	(1)	---	3.04	(1)	3.04	NAA
U-234	mBq/g	39.1 ± 1.4	---	---	---	---	---	---	---	
U-234	pCi/g	1.06 ± 0.04	---	---	---	---	---	---	---	
U-235	mBq/g	1.9	---	---	---	---	---	---	---	
U-235	pCi/g	0.051	---	---	---	---	---	---	---	
U-238	mBq/g	38.9 ± 2.0	---	---	---	---	---	---	---	
U-238	pCi/g	1.05 ± 0.05	1.45	(1)	---	---	1.45	(1)	1.45	GAMMA

TABLE 4353-2: INDIVIDUAL DATA FOR NBS SRM 4353 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
<u>Ac-228 (pCi/g)</u>									
2.48	0.57		GAMMA	83KIM 01	0.169	0.014	11	AS	85YAM 02
<u>Am-241 (pCi/g)</u>									
0.024			GAMMA	86GAU 01	0.202	0.039		AS	84GLA 02
0.035	0.004		RAS	85GAU 04	0.207	0.014	11	AS	85YAM 02
0.04	0.004		RAS	84GLA 11	0.212	0.011	11	AS	85YAM 02
0.042	0.008		AS	84GLA 02	0.218	0.014	11	AS	85YAM 02
<u>Cs-137 (pCi/g)</u>									
0.48	0.04		GAMMA	86GAU 01	0.22	0.02		RAS	86GAU 01
0.52	0.06		GAMMA	84GLA 02	0.22	0.02		RAS	84GLA 11
0.56	0.05		GAMMA	85GAU 04	0.221	0.017	11	AS	85YAM 02
0.67	0.1		GAMMA	84GLA 11	<u>Ra-226 (pCi/g)</u>				
<u>K-40 (pCi/g)</u>									
25			GAMMA	86GAU 01	1.03	0.16		GAMMA	83KIM 01
<u>Pu-238 (pCi/g)</u>									
<	0.01		RAS	86GAU 01	1.97	0.04		AS	85JOS 01
0.0035	0.0019		AS	84GLA 02	0.88	0.05		AS	85JOS 01
0.004	0.002		RAS	84GLA 11	1.2			AS	84GLA 02
<u>Th-228 (pCi/g)</u>									
<u>Th-230 (pCi/g)</u>									
1.93					1.93	0.08		AS	85JOS 01
<u>Th-232 (pCi/g)</u>									
<u>U (ug/g)</u>									
3.04					3.04	0.07		DNA	85GAU 04
<u>U-238 (pCi/g)</u>									
1.45					1.45	0.49		GAMMA	83KIM 01

TABLE 4355-1: COMPILED DATA FOR NBS SRM 4355 ENVIRONMENTAL RADIOACTIVITY - PERUVIAN SOIL (revised 3/1/86)  
 (Activity as of 1 June 1982)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean ± SD	Mean (n)	
Ag	ug/g	1.9	---	---
Al	%	8.19 ± 0.28	---	---
Am-241	mBq/g	0.004 ± 0.001	---	---
Am-241	pCi/g	0.0001	---	---
As	ug/g	93.9 ± 7.5	---	---
B	ug/g	63	---	---
Ba	ug/g	561 ± 53	---	---
Be	ug/g	1.77 ± 0.27	---	---
Bi	ug/g	12	---	---
Bi-214	mBq/g	40	---	---
Bi-214	pCi/g	1.2	---	---
Br	ug/g	5.4 ± 1.0	---	---
Ca	%	2.2	---	---
Cd	ug/g	1.5	---	---
Ce	ug/g	59.3 ± 3.0	---	---
Co	ug/g	14.8 ± 0.76	---	---
Co-60	mBq/g	< 0.016	---	---
Co-60	pCi/g	< 0.0004	---	---
Cr	ug/g	28.9 ± 2.8	---	---
Cs	ug/g	56.7 ± 3.3	---	---
Cs-137	mBq/g	0.33 ± 0.04	---	---
Cs-137	pCi/g	0.0090 ± 0.0011	---	---
Cu	ug/g	77.1 ± 4.7	---	---
Dy	ug/g	4 ± 1	---	---
Eu	ug/g	1.18 ± 0.08	---	---
Eu-152	mBq/g	< 0.23	---	---
Eu-152	pCi/g	< 0.0063	---	---
Eu-154	mBq/g	< 0.2	---	---
Eu-154	pCi/g	< 0.006	---	---
Eu-155	mBq/g	< 0.2	---	---
Eu-155	pCi/g	< 0.006	---	---
F	ug/g	682	---	---
Fe	%	4.45 ± 0.19	---	---
Fe-55	mBq/g	2.0	---	---
Fe-55	pCi/g	0.05	---	---
Ga	ug/g	18.4 ± 1.6	---	---
Gd	ug/g	35	---	---
Hf	ug/g	6.3 ± 0.3	---	---
Hg	ug/g	0.79	---	---
Ho	ug/g	0.82	---	---
K	%	1.86 ± 0.15	---	---
K-40	mBq/g	585	---	---
K-40	pCi/g	16	---	---
La	ug/g	28.1 ± 1.5	---	---
Li	ug/g	52 ± 33	---	---
Lu	ng/g	336 ± 44	---	---

TABLE 4355-1: COMPILED DATA FOR NBS SRM 4355 ENVIRONMENTAL RADIOACTIVITY - PERUVIAN SOIL (cont.)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
		Mean ± SD	Mean (n)	
Mg	%	1.5	---	---
Mg	ug/g	852 ± 37	---	---
Mo	ug/g	1.7	---	---
Na	%	1.92 ± 0.11	---	---
Nb	ug/g	9	---	---
Nd	ug/g	29.9 ± 1.6	---	---
Ni	ug/g	13	---	---
P	ug/g	1100	---	---
Pb	ug/g	129 ± 26	---	---
Pr	ug/g	5	---	---
Pu-238	mBq/g	0.003	---	---
Pu-238	pCi/g	< 0.0001	---	---
Pu-239	mBq/g	0.0076 ± 0.0021	---	---
Pu-239	pCi/g	0.0002 ± 0.0001	---	---
Rb	ug/g	138 ± 7.4	---	---
Sb	ug/g	14.3 ± 2.2	---	---
Sb-125	mBq/g	< 0.14	---	---
Sb-125	pCi/g	< 0.0038	---	---
Sc	ug/g	14.8 ± 0.66	---	---
Se	ug/g	1.4	---	---
Si	%	33	---	---
Sm	ug/g	5.42 ± 0.39	---	---
Sr	ug/g	330	---	---
Sr-90	mBq/g	0.22	---	---
Sr-90	pCi/g	0.006	---	---
Ta	ng/g	764 ± 56	---	---
Tb	ng/g	665 ± 75	---	---
Th	ug/g	11.3 ± 0.73	---	---
Th-228	mBq/g	42.2 ± 2.1	---	---
Th-228	pCi/g	1.15 ± 0.06	1.17 (1)	AS
Th-230	mBq/g	39.7 ± 2	---	---
Th-230	pCi/g	1.08 ± 0.06	0.99 (1)	AS
Th-232	pCi/g	1.17 ± 0.06	1.21 (1)	AS
Ti	ug/g	4700	---	---
Tl-208	mBq/g	12	---	---
Tl-208	pCi/g	0.33	---	---
Tm	ng/g	420	---	---
U	ug/g	3.04 ± 0.51	2.82 (2)	NAA
V	ug/g	151	---	---
W	ug/g	5.1	---	---
Y	ug/g	21	---	---
Yb	ug/g	2.24 ± 0.2	---	---
Zn	ug/g	368 ± 8.2	---	---
Zr	ug/g	221	---	---

TABLE 4355-2: INDIVIDUAL DATA FOR NBS SRM 4355 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference		Conc	Uncer	Com	Method	Reference
<u>Th-228 (pCi/g)</u>										
1.17	0.03		AS	85JOS 01		1.21	0.06		AS	85JOS 01
<u>Th-232 (pCi/g)</u>										
0.99	0.05		AS	85JOS 01		2.75	0.09	DNA	85GAU 04	
						2.88	0.05	DNA	85GLA 04	

TABLE 8412-1: COMPILED DATA FOR NBS RMs 8412 and 8413 CORN STALK AND KERNEL (revised 3/1/87)

ELEMENT	UNITS	NBS			
		8412		8413	
		Mean	± SD	Mean	± SD
Al	ug/g	---		4 ± 2	
Ca	ug/g	2160 ± 80		42 ± 5	
Cl	ug/g	2440 ± 140		450 ± 120	
Cu	ug/g	8 ± 1		3.0 ± 0.6	
F	ng/g	650 ± 130		240 ± 20	
Fe	ug/g	139 ± 15		23 ± 5	
K	%	1.735 ± 0.047		3570 ± 370	
Mg	ug/g	1600 ± 70		990 ± 82	
Mn	ug/g	15 ± 2		4.0 ± 0.3	
N	%	0.697 ± 0.032		1.375 ± 0.043	
Na	ug/g	28 ± 8		---	
Se	ng/g	16 ± 8		4 ± 2	
Sr	ug/g	12 ± 2		---	
Zn	ug/g	32 ± 3		15.7 ± 1.4	

TABLE 8030-1: COMPILED DATA FOR NBS RM 8030 TRACE ELEMENTS IN AN AQUATIC PLANT LAGAROSIPHON MAJOR (revised 8/1/87)  
 Community Bureau of Reference BCR No. 60

Element	Units	NBS
		Mean ± SD
Ag	ng/g	200
Al	ug/g	6140
As	ug/g	8
Au	ng/g	20
B	ug/g	25
Br	ug/g	20
Ca	%	3.10
Cd	ug/g	2.20 ± 0.10
Ce	ug/g	4
Cl	%	1.0
Co	ug/g	4
Cr	ug/g	26
Cs	ng/g	400
Cu	ug/g	51.2 ± 1.9
Eu	ng/g	170
F	ug/g	24
Fe	ug/g	2380
Hg	ng/g	340 ± 40
K	%	1.14
La	ug/g	2
Mg	ug/g	6030
Mn	ug/g	1759 ± 51
Mo	ug/g	2
N	%	4.12
Na	ug/g	6700
Ni	ug/g	40
P	ug/g	5140
Pb	ug/g	63.8 ± 3.2
Rb	ug/g	23
S	ug/g	5200
Sb	ng/g	400
Sc	ng/g	500
Se	ng/g	700
Si	%	2.85
Sn	ug/g	6
Ta	ng/g	100
Tb	ng/g	100
Ti	ug/g	240
Tl	ng/g	240
U	ng/g	300
V	ug/g	6
W	ug/g	20
Zn	ug/g	313 ± 8

TABLE 8031-1: COMPILED DATA FOR NBS RM 8031 TRACE ELEMENTS IN AN AQUATIC MOSS PLATIHYPNIDIUM RIPARIOIDES

(revised 8/1/87)

Community Bureau of Reference BCR No. 61

Element	Units	NBS
		Mean ± SD
Ag	ug/g	2
Al	%	1.71
As	ug/g	7
Au	ng/g	220
B	ug/g	77
Br	ug/g	22
Ca	%	1.70
Cd	ug/g	1.07 ± 0.08
Ce	ug/g	12
Cl	ug/g	2300
Co	ug/g	43
Cr	ug/g	532
Cs	ng/g	600
Cu	ug/g	720 ± 31
Eu	ng/g	200
F	ug/g	60
Fe	%	0.93
Hg	ng/g	230 ± 20
K	%	1.24
La	ug/g	5
Mg	ug/g	3900
Mn	ug/g	3771 ± 78
Mo	ug/g	11
N	%	3.35
Na	ug/g	3000
Ni	ug/g	420
P	%	0.92
Pb	ug/g	64.4 ± 3.5
Rb	ug/g	32
S	ug/g	2300
Sb	ug/g	1
Sc	ug/g	1
Se	ug/g	1
Si	%	7.52
Sn	ug/g	13
Ta	ng/g	500
Tb	ng/g	200
Ti	ug/g	780
Tl	ng/g	130
U	ng/g	260
V	ug/g	6
W	ug/g	239
Zn	ug/g	566 ± 13

TABLE 8032-1: COMPILED DATA FOR NBS RM 8032 TRACE ELEMENTS IN A CALCAREOUS LOAM SOIL (revised 8/1/87)  
 Community Bureau of Reference BCR No. 141

Element	Units	NBS Mean ± SD
Al	%	5.59
As	ug/g	8
Ba	ug/g	243
Br	ug/g	3.5
Ca	%	12.86
Cd	ng/g	360 ± 100
Ce	ug/g	81
Cu	ug/g	32.6 ± 1.4
Eu	ug/g	0.9
Fe	%	2.61
Ga	ug/g	14
Hf	ug/g	3.7
Hg	ng/g	56.8 ± 4.3
K	%	1.29
La	ug/g	27
LOI	%	20.65
Mg	ug/g	7180
Na	ug/g	3200
Nb	ug/g	10
P	ug/g	700
Pb	ug/g	29.4 ± 2.6
Rb	ug/g	95
Sb	ng/g	600
Sc	ug/g	8.4
Si	%	19.88
Sm	ug/g	6.3
Sn	ug/g	4.0
Sr	ng/g	460
Th	ug/g	10.3
Ti	ug/g	2800
W	ug/g	1.4
Y	ug/g	24
Yb	ug/g	2.1
Zn	ug/g	81.3 ± 3.7
Zr	ug/g	120

TABLE 8033-1: COMPILED DATA FOR NBS RM 8033 TRACE ELEMENTS IN A LIGHT SANDY SOIL (revised 8/1/87)  
 Community Bureau of Reference BCR No. 142

Element	Units	NBS
		Mean ± SD
Al	%	5.01
As	ug/g	16
Ba	ug/g	450
Br	ug/g	6
Ca	%	3.53
Cd	ng/g	250 ± 90
Ce	ug/g	80
Cu	ug/g	27.5 ± 0.6
Dy	ug/g	5.15
Er	ug/g	2.84
Eu	ug/g	1.0
Fe	%	1.96
Ga	ug/g	11
Gd	ug/g	5.7
Hf	ug/g	12
Hg	ng/g	104 ± 12.3
K	%	2.00
La	ug/g	32
Lu	ng/g	410
Mg	ug/g	6570
Na	ug/g	7200
Nb	ug/g	14
Nd	ug/g	28
Ni	ug/g	29.2 ± 2.5
P	ug/g	960
Pb	ug/g	37.8 ± 1.9
Rb	ug/g	105
Sb	ug/g	2.5
Sc	ug/g	8.2
Si	%	31.86
Sm	ug/g	6.8
Sn	ug/g	4
Sr	ug/g	164
Th	ug/g	11.9
Ti	ug/g	3700
W	ug/g	1.2
Y	ug/g	30.4
Yb	ug/g	2.77
Zn	ug/g	92.4 ± 4.4
Zr	ug/g	390

TABLE 8034-1: COMPILED DATA FOR NBS RM 8034 TRACE ELEMENTS IN A SEWAGE SLUDGE (revised 8/1/87)  
 Community Bureau of Reference BCR No. 144

Element	Units	NBS
		Mean $\pm$ SD
Ag	ug/g	13
Al	%	2.42
As	ug/g	6.7
Au	ug/g	1
B	ug/g	61
Be	ng/g	660
Bi	ug/g	16
Br	ug/g	9
Ca	%	4.06
Cd	ug/g	3.41 $\pm$ 0.25
Ce	ug/g	14
Co	ug/g	9.06 $\pm$ 0.60
Cu	ug/g	713 $\pm$ 26
Fe	%	4.43
Ga	ug/g	5
Hg	ug/g	1.49 $\pm$ 0.22
K	ug/g	6500
Mg	ug/g	5500
Mn	ug/g	449 $\pm$ 13
Mo	ug/g	4
Na	ug/g	3400
Nb	ug/g	3
Ni	ug/g	942 $\pm$ 22
P	%	2.21
Pb	ug/g	495 $\pm$ 19
Rb	ug/g	14
Sc	ug/g	1.5
Si	%	6.37
Sn	ug/g	98
Ti	ug/g	1140
Tl	ng/g	490
V	ug/g	14
W	ug/g	7
Y	ug/g	5
Zn	ug/g	3143 $\pm$ 103
Zr	ug/g	56

TABLE 8035-1: COMPILED DATA FOR NBS RM 8035 TRACE ELEMENTS IN A SEWAGE SLUDGE OF MAINLY INDUSTRIAL ORIGIN  
(revised 8/1/87)

Community Bureau of Reference BCR No. 146

Element	Units	NBS
		Mean $\pm$ SD
Ag	ug/g	203
Al	%	4.76
As	ug/g	5.1
Au	ug/g	3.6
B	ug/g	50
Be	ug/g	5.4
Br	ug/g	6
Ca	%	10.2
Cd	ug/g	77.7 $\pm$ 2.6
Ce	ug/g	100
Co	ug/g	11.8 $\pm$ 0.7
Cu	ug/g	934 $\pm$ 24
Fe	%	1.85
Ga	ug/g	6
Hg	ug/g	9.49 $\pm$ 0.76
K	ug/g	4800
La	ug/g	14
LOI	%	37.7
Mg	%	2.0
Mn	ug/g	588 $\pm$ 24
Mo	ug/g	10
Na	ug/g	2200
Nb	ug/g	15
Ni	ug/g	280 $\pm$ 18
P	%	2.57
Pb	ug/g	1270 $\pm$ 28
Rb	ug/g	27
Sc	ug/g	2.4
Si	%	10.6
Ti	%	1.74
Tl	ug/g	1.2
V	ug/g	35
W	ug/g	6
Zn	ug/g	4059 $\pm$ 90
Zr	ug/g	9

TABLE 8036-1: COMPILED DATA FOR NBS RM 8036 TRACE ELEMENTS IN A SPIKED SKIM MILK POWDER (revised 8/1/87)  
Community Bureau of Reference BCR No. 150

Element	Units	NBS
		Mean $\pm$ SD
Cd	ng/g	21.8 $\pm$ 1.4
Co	ng/g	6.4
Cu	ug/g	2.23 $\pm$ 0.08
Fe	ug/g	11.8 $\pm$ 0.6
Hg	ng/g	9.4 $\pm$ 1.7
I	ug/g	1.29 $\pm$ 0.09
Mn	ng/g	236
Ni	ng/g	61.5
Pb	ug/g	1.00 $\pm$ 0.04
Se	ng/g	127
Tl	ng/g	1.0
Zn	ug/g	49.4

TABLE 8431-1: COMPILED DATA FOR NBS RM 8431 MIXED DIET (revised 3/1/87)

ELEMENT	UNITS	NBS Mean ± SD
Al	ug/g	4.39 ± 1.07
As	ug/g	0.92 ± 0.34
Ca	ug/g	1940 ± 140
Cd	ng/g	42 ± 11
Co	ng/g	38 ± 8
Cr	ng/g	102 ± 6
Cu	ug/g	3.36 ± 0.33
Fe	ug/g	37.0 ± 2.6
K	ug/g	7900 ± 4200
Mg	ug/g	650 ± 40
Mn	ug/g	8.12 ± 0.31
Mo	ng/g	288 ± 29
Na	ug/g	3120 ± 160
Ni	ng/g	644 ± 151
P	ug/g	3320 ± 310
Se	ng/g	242 ± 30
Zn	ug/g	17.0 ± 0.6
ASH	%	3.00 ± 0.09
Calorie	Cal/100 g	436
Fat	%	9.5 ± 0.92
Fructose	%	5.8
Glucose	%	6.5
Lactose	%	3.7
Maltose	%	1.8
Phytate	mg/g	2.10
Protein	%	19.1 ± 0.6
Starch	%	24.6 ± 5.0
Sucrose	%	11.1
Total Sugar	%	28.3 ± 1.7
Total Fiber	%	5.3

## Appendix

### References for NBS SRM Collected Data

CODE N	REFERENCE	CODE N	REFERENCE
55COL D1	M. E. Coller and R. K. Leininger (1955) Determination of Total Sulfur Content of Sedimentary Rocks by a Combustion Method, <i>Analytical Chemistry</i> , 27: 949-951.	69COM 01	W. Compston, B. Chappell, P. Arriens, and M. Vernon (1969) On the Feasibility of NBS 7DA K-Feldspar as a Rb-Sr Age Reference Sample, <i>Geochimica et Cosmochimica Acta</i> , 33: 753.
57SHI D1	N. F. Shimp, J. Connor, A. Prince, and F. Bear (1957) Spectrochemical Analysis of Soils and Biological Materials, <i>Soil Science</i> , 83: 51-64.	69EDM 01	C. R. Edmond (1969) Direct Determination of Fluoride in Phosphate Rock Samples, Using the Specific Ion Electrode, <i>Analytical Chemistry</i> , 41: 1327-1328.
58GRA D1	R. J. Grabowski and R. C. Unice (1958) Quantitative Spectrochemical Determination of Barium and Strontium, <i>Analytical Chemistry</i> , 30: 1374-1379.	69LAE D1	J. R. de Laeter, I. D. Aberchombie, and R. Date (1969) Mass Spectrometric Isotope Dilution Analyses of Barium in Standard Rocks, <i>Earth and Planetary Science Letters</i> , 7: 64.
58WAT D1	H. L. Watts (1958) Volumetric Determination of Aluminium in the Presence of Iron, Titanium, Calcium, Silicon, and other Impurities, <i>Analytical Chemistry</i> , 30: 967-970.	69THI 01	G. Thielicke (1969) Titrimetrische Bestimmung des Aluminiums in Silicatgesteinen mit Potentiometrischer Indikation, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 246: 118-122.
59COL D1	P. F. Collins, H. Diehl, and G. F. Smith (1959) Determination of Iron in Limestone, Silicates, and Refractories, <i>Analytical Chemistry</i> , 31: 1862-1867.	69WIC 01	R. Wickbold (1969) Extraktion des Eisens mit Methylisobutylketon und seine Titration im Extrakt mit ADTA, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 244: 372-375.
61TUR 01	K. K. Turekian and M. H. Carr (1961) Chromium, Cobalt, and Strontium in some Bureau of Standards Rock Reference Samples, <i>Geochimica et Cosmochimica Acta</i> , 24: 1-9.	70ING 01	B. L. Ingram (1970) Determination of Fluoride in Silicate Rocks Without Separation of Aluminium using a Specific Ion Electrode, <i>Analytical Chemistry</i> , 42: 1825-1827.
62JOE 01	O. I. Joensuu and N. H. Suhr (1962) Spectrochemical Analysis of Rocks, Minerals, and Related Materials, <i>Applied Spectroscopy</i> , 16: 1D1-1D4.	70LAE D1	J. R. de Laeter and I. D. Aberchombie (1970) Mass Spectrometric Isotope Dilution Analyses of Rubidium and Strontium in Standard Rocks, <i>Earth and Planetary Science Letters</i> , 9: 327-330.
63CLA 01	M. C. Clark and D. J. Swaine (1963) Trace Element Contents of the National Bureau of Standards Reference Samples Numbers 1A, 98, and 99, <i>Geochimica et Cosmochimica Acta</i> , 27: 1139-1142.	71FAB D1	B. P. Fabbri (1971) Rapid X-ray Fluorescence Determination of Phosphorus in Geological Samples, <i>Applied Spectroscopy</i> , 25: 41-43.
63KOR D1	J. Korkisch, G. Arrhenius, and D. P. Kherker (1963) Spectrophotometric Determination of Titanium After Separation by Anion Exchange, <i>Analytica Chimica Acta</i> , 28: 27D-277.	71HEI 02	R. H. Heidel (1971) Precision and Detection Limits of Certain Minor and Trace Elements in Silicates by Electron Microprobe Analysis, <i>Analytical Chemistry</i> , 43: 1907-1908.
64FIL 01	R. H. Filby (1964) The Contents of Several Trace Elements in Some Standard Rock Samples, <i>Geochimica et Cosmochimica Acta</i> , 28: 265-269.	71PET D1	M. A. Peters and D. M. Ladd (1971) Determination of Fluoride in Oxides with the Fluoride-ion Activity Electrode, <i>Talanta</i> , 18: 655-664.
65BAL 01	T. K. Ball and R. H. Filby (1965) The Zinc Contents of Some Geochemical Standards by Neutron Activation and X-ray Fluorescence Analysis, <i>Geochimica et Cosmochimica Acta</i> , 29: 737-740.	72ALL 01	W. J. F. Allen (1972) The Determination of Rubidium and Caesium in Geological Materials by Atomic Emission Spectrophotometry with a Nitrous Oxide-Acetylene Flame, <i>Analytica Chimica Acta</i> , 59: 111-117.
65MTA 01	Proceedings of the 1965 International Conference on Modern Trends in Activation Analysis, College Station, Texas.	72ARU D1	P. J. Aruscavage and H. T. Millard (1972) A Neutron Activation Procedure for the Determination of Uranium, Thorium, and Potassium in Geological Samples, <i>Journal of Radioanalytical Chemistry</i> , 11: 67-84.
65WAH 01	W. H. Wahl, V. J. Molinski, and H. Arino (1965) Rapid Radiochemical Separation Procedures for Activation Analysis Indicators, in 65MTA 01, pp. 44-47.	72ASH D1	D. G. Ashley and K. W. Andrews (1972) Analysis of Aluminosilicate Materials by X-ray Fluorescence Spectrometry, <i>Analyst</i> , 97: 841-845.
65WEL D1	W. Wells (1965) Selenium Content of Soil-Forming Rocks, <i>New Zealand Journal of Geology and Geophysics</i> , 10: 198-208; taken from 74CRE 01.	72AVN 01	R. Avni, A. Harel, and I. B. Brenner (1972) A New Approach to the Spectrochemical Analysis of Silicate Rocks and Minerals, <i>Applied Spectroscopy</i> , 26: 641-645.
66HAM 01	E. I. Hamilton (1966) The Uranium Content of Some International Standards, <i>Earth and Planetary Science Letters</i> , 1: 317-318.	72BEC D3	D. A. Becker and P. D. Lafleur (1972) Determination of Trace Quantities of Uranium in Biological Materials by Neutron Activation Analysis using a Rapid Radiochemical Separation, <i>Analytical Chemistry</i> , 44: 1508.
67KOD 01	H. Kodama, J. E. Brydon, and B. C. Stone (1967) X-ray Spectrochemical Analysis of Silicates using Synthetic Standards with a Correction of Interelemental Effects by a Computer Method, <i>Geochimica et Cosmochimica Acta</i> , 31: 649-659.		

CODE	N	REFERENCE	CODE	N	REFERENCE
72BOU	01	J. L. Bouvier, J. G. Sen Gupta, and S. Abbey (1972) Title Unknown, Geological Survey of Canada paper 72-31, p. 22; taken from 77LAN 01.	72ROO	D1	H. L. Rook, P. D. Lafleur, and T. E. Gills (1972) Mercury in Coal: A New Standard Reference Material, Environmental Letters, 2: 195-204.
72BOW	D1	H. J. M. Bowen (1972) The Determination of Tin in Biological Material by using Neutron Activation Analysis, Analyst, 97: 1DD3-1DD5.	72ROO	02	H. L. Rook, T. E. Gills, and P. D. Lafleur (1972) Method for Determination of Mercury in Biological Materials by Neutron Activation Analysis, Analytical Chemistry, 44: 1114-1117.
72BYR	01	A. R. Byrne (1972) The Toluene Extraction of Some Elements as Iodides from Sulfuric Acid-Potassium Iodide Media: Application to Neutron Activation Analysis, Analytica Chimica Acta, 59: 91-99.	72ROO	03	H. L. Rook (1972) Rapid, Quantitative Separation for the Determination of Selenium using Neutron Activation, Analytical Chemistry, 44: 1276-1278.
72CAR	01	B. S. Carpenter (1972) Determination of Trace Concentration of Boron and Uranium in Glass by Nuclear Track Technique, Analytical Chemistry, 44: 600-602.	72ROS	D2	J. N. Roskolt (1972) Private Communication; taken from 72ARU 01.
72DAM	01	D. Damsgaard, K. Heydorn, and B. Rietz (1972) Determination of Vanadium in Biological Materials by Neutron Activation Analysis, in 72IAE 01, pp. 119-130.	72SAN	D1	P. M. Santoliquido and R. R. Ruch (1972) Rapid Radiochemical Separation and Determination of Gallium in Coal Ash, Radiochemical and Radioanalytical Letters, 12: 71-76.
72GIB	01	D. Gibbons, M. Perkins, and T. W. Sanders (1972) Determination of Lead in Biological Materials by Neutron Activation Analysis, in 72IAE D1, pp. 131-138.	72SEI	01	W. R. Seitz and D. M. Hercules (1972) Determination of Trace Amounts of Iron(II) using Chemiluminescence Analysis, Analytical Chemistry, 44: 2143-2148.
72HEI	D1	M. W. Heitzman and R. E. Simpson (1972) Neutron Activation Analysis of Mercury in Fish, Flour, and Standard Reference Orchard Leaves by Electrodeposition Radiochemistry, Journal of the Association of Official Analytical Chemists, 55: 960-965.	72SIN	D1	I. Sinko and L. Kosta (1972) Determination of Lead, Cadmium, Copper, and Zinc in Biological Materials by Anodic Stripping Polarography, International Journal of Environmental Analytical Chemistry, 2: 167-178.
72IAE	D1	International Atomic Energy Agency (1972) Nuclear Activation Techniques in the Life Sciences, Proceedings of a Symposium held in Bled, Yugoslavia, STI/PUB/310.	73ABE	01	K. H. Abel and L. A. Rancitelli (1973) Major, Minor, and Trace Element Composition of Coal and Fly Ash, as Determined by Instrumental Neutron Activation Analysis, in 73BAB D1, pp. 118-138.
72JON	D3	J. B. Jones and R. A. Issac (1972) Determination of Sulfur in Plant Material using a LECO Sulfur Analyzer, Journal of Agricultural and Food Chemistry, 20: 1292-1294.	73BAB	D1	S. P. Babu, editor (1973) Trace Elements in Fuel, Advances in Chemistry Series 141, American Chemical Society, Washington, D. C.
72LEV	01	M. Levstek, L. Kosta, M. Dermelj, and A. R. Byrne (1972) Vanadium Determination in Biological Materials by the use of Preconcentration, in 72IAE 01, pp. 111-116.	73BAR	D1	I. L. Barnes, E. Garner, J. Gramlich, L. Moore, T. Murphy, L. MacLan, W. Shields, M. Tatsumoto, and R. Knight (1973), Determination of Lead, Uranium, Thorium, and Thallium in Silicate Glass Standard Materials by Isotope Dilution Mass Spectrometry, Analytical Chemistry, 45: 880-885.
72LYO	01	W. S. Lyon, L. C. Bate, and J. F. Emery (1972) Environmental Pollution: Use of Neutron Activation Analysis to Determine the Fate of Trace Elements from Fossil Fuel Combustion in the Ecological Cycle, in 72IAE D1, pp. 253-261.	73BES	D1	Y. Besnus and R. Rouault (1973) Une Methode D'Analyse des Roches au Spectrometre D'Arc a Lecture Directe par un Dispositif D'Electrode Rotative, Analisis, 2: 111-116.
72MAG	01	C. W. Magee, D. L. Donohue, and W. W. Harrison (1972) Advantages of Dual Electrode Mounts in Spark Source Mass Spectrometry using Electrical Detection, Analytical Chemistry, 44: 2413-2415.	73BLA	01	M. S. Black and R. E. Sievers (1973) Environmental Analysis Problems Created by Unexpected Volatile Beryllium Compounds in Various Samples, Analytical Chemistry, 45: 1773-1775.
72MAI	D1	E. J. Maienthal (1972) Analysis of Botanical Standard Reference Materials by Cathode Ray Polarography, Journal of the Association of Official Analytical Chemists, 55: 1109-1113.	73BLO	D2	A. J. Blotcky, L. J. Arsenault, and E. P. Rack (1973) Optimum Procedure for the Determination of Selenium in Biological Specimens using Se-75m Neutron Activation, Analytical Chemistry, 45: 1056-1060.
72MOR	D3	G. H. Morrison and N. M. Potter (1972) Multielement Neutron Activation Analysis of Biological Material using Chemical Group Separations and High Resolution Gamma-ray Spectrometry, Analytical Chemistry, 44: 839-842.	73CAR	01	J. A. Carter, D. Matthews, R. Walker, and J. Walton (1973) Measurement of Nitrogen and Nitrogen Isotopic Ratios using Reduction Pyrolysis Coupled with Mass Spectrometry, Analytical Letters, 6: 951-960.
72RAI	01	T. C. Rains and O. Menis (1972) Determination of Submicrogram Amounts of Mercury in Standard Reference Materials by Flameless Atomic Absorption Spectrometry, Journal of the Association of Official Analytical Chemists, 55: 1339-1344.	73COR	01	R. Cornelis, A. Speecke, and J. Hoste (1973) A Multielement Serum Standard for Neutron Activation Analysis, Analytica Chimica Acta, 68: 1-10.

CODE N	REFERENCE
73DAM 01	E. Damsgaard and K. Heydorn (1973) Arsenic in Standard Reference Material 1571 (Orchard Leaves) Presented at the Third Symposium on the Recent Developments in Neutron Activation, Cambridge; also in Danish Atomic Energy Commission report RISO-M-1633.
73GIA 01	R. D. Giauque, F. Goulding, J. Jaklevic, and R. Pehl (1973) Trace Element Determination with Semiconductor Detector X-ray Spectrometers, Analytical Chemistry, 45: 671-681.
73GOE 01	J. de Goeij, V. Guinn, D. Young, and A. Mearns (1973) Activation Analysis Trace Element Studies of Dover Sole Liver and Marine Sediments, IRI report 133-73-09 (Delft).
73HEM 01	D. D. Hemphill, editor (1973) Proceedings of the Seventh Annual Conference on Trace Substances in Environmental Health, University of Missouri, Columbia, Missouri.
73HEY 01	K. Heydorn and E. Damsgaard (1973) Simultaneous Determination of Arsenic, Manganese, and Selenium in Biological Materials by Neutron Activation Analysis, Talanta, 20: 1-11.
73KAR 01	S. S. Karacki and F. L. Corcoran (1973) Coal Ash Analysis with an Argon Plasma Emission Excitation Source, Applied Spectroscopy, 27: 41-42.
73KIM 01	J. I. Kim and H.-J. Born (1973) Monostandard Activation Analysis and its Applications: Analyses of Kale Powder and NBS Standard Glass Samples, Journal of Radioanalytical Chemistry, 13: 427.
73LEB 01	P. J. LeBlanc and A. L. Jackson (1973) Dry Ashing Technique for the Determination of Arsenic in Marine Fish, Journal of the Association of Official Analytical Chemists, 56: 383-386.
73LO 01	F.-C. Lo and B. Bush (1973) Modified Procedure for Determining Mercury in Coal by Cold Vapor Atomic Absorption Spectrophotometry, Journal of the Association of Official Analytical Chemists, 56: 1509-1510.
73LOO 01	J. C. van Loon, J. Lichwe, and D. Ruttan (1973) A Study of the Determination and Distribution of Cadmium in Samples Collected in a Heavily Industrialized and Urbanized Region (Metropolitan Toronto), International Journal of Environmental Analytical Chemistry, 3: 147-160.
73LOO 03	J. C. van Loon and J. Lichwa (1973) A Study of the Atomic Absorption Determination of Some Important Heavy Metals in Fertilizers and Domestic Sewage Plant Sludges, Environmental Letters, 4: 1-8.
73MAI 01	E. J. Maienthal (1973) Determination of Trace Elements in Silicate Matrices by Differential Cathode Ray Polarography, Analytical Chemistry, 45: 644-648.
73MOO 01	L. J. Moore, J. Moody, I. Barnes, J. Gramlich, T. Murphy, P. Paulsen, and W. Shields (1973), Trace Determination of Rubidium and Strontium in Silicate Glass Standard Reference Materials, Analytical Chemistry, 45: 2384-2387.
73NAD 01	R. A. Nadkarni and G. H. Morrison (1973) Multielement Instrumental Neutron Activation Analysis of Biological Materials, Analytical Chemistry, 45: 1957-1960.
73PIE 01	J. Pierce, A. Abu-Samra, D. Fehlauer, T. Clevenger and J. Vogt (1973), Title unknown, in Trace Elements in Relation to Cardiovascular Diseases, IAEA, Vienna, p. 103; taken from 80HEY 01.

CODE N	REFERENCE
73RAM 01	E. R. Rambaldi (1973) Variation in the Composition of Plagioclase and Epidote in some Metamorphic Rocks near Bancroft, Ontario, Canadian Journal of Earth Sciences, 10: 852-868.
73SEG 01	D. A. Segar and J. L. Gilio (1973) The Determination of Trace Transition Elements in Biological Tissues using Flameless Atom Reservoir Atomic Absorption, International Journal of Environmental Analytical Chemistry, 2: 291-301.
73SHA 01	L. Shapiro (1973) Rapid Determination of Sulfur in Rocks, Journal of Research of the U. S. Geological Survey, 1: 81-84.
73SHE 01	D. W. Sheibley (1973) Trace Elements in Instrumental Neutron Activation Analysis for Pollution Monitoring, in 73BAB 01, pp. 98-117.
73SPA 01	C. J. Sparks, O. Cavin, L. Harris, and J. Ogle (1973) Simple, Quantitative X-ray Fluorescent Analysis for Trace Elements, in 73HEM 01, pp. 361-368.
73STE 01	E. Steinnes (1973) Title unknown, in Trace Elements in Relation to Cardiovascular Diseases, IAEA Technical Report 157, p. 149; taken from 78BYR 01.
73TAL 01	Y. Talmi and R. Crosmun (1973) Applicability of the RF-Furnace Technique for AA and AE Analysis of Trace Elements in Environmental Samples, in 73HEM 01, pp. 379-383.
73THO 01	A. O. Thomas and L. E. Smythe (1973) Rapid Destruction of Plant Material with Concentrated Nitric Acid Vapor (Vapor Phase Oxidation), Talanta, 20: 469-475.
73TJI 01	P. S. Tjioe, J. de Goeij, and J. Houtman (1973) Automated Chemical Separations in Routine Activation Analysis, Journal of Radioanalytical Chemistry, 16: 153-164.
74ALV 01	R. Alvarez (1974) Sub-microgram per gram Concentrations of Mercury in Orchard Leaves Determined by Isotope Dilution and Spark-source Mass Spectrometry, Analytica Chimica Acta, 73: 33-38.
74AND 01	L. W. Anderson and L. Acs (1974) Selenium in North American Paper Pulps, Environmental Science and Technology, 8: 462-464.
74AND 03	C. H. Anderson, J. E. Mander, and J. W. Leitner (1974) Advances in X-ray Analysis, Plenum, New York, Vol. 17, p. 214; taken from 82TER 03.
74BEC 01	R. R. Becker, A. Veglia, and E. R. Schmid (1974) Instrumental Neutron Activation Analysis of Standard Biological Materials, Radiochemical and Radioanalytical Letters, 19: 343-354.
74BEL 01	Y. Belot and T. Marini (1974) Analyse par Activation Neutronique des Polluants Atmosphériques Solides Avec une Technique de Standard Interne, Journal of Radioanalytical Chemistry, 19: 319-327.
74BER 01	J. Bergholz, J. Luck, P. Moller, and W. Szacki (1974) Funkquellen-Massenpektrometrische Analyse des NBS-SRM 610 (3mm) Standards, Fresenius Zeitschrift für Analytische Chemie, 269: 121.

CODE N	REFERENCE	CODE N	REFERENCE
74BOP 01	B. Boppel (1974) Bleigehalte von Lebensmitteln. zur Analytik der Bleibestimmung in Lebensmitteln, Fresenius Zeitschrift fur Analytische Chemie, 268: 114-119.	74CRE 01	G. L. Crenshaw and H. W. Lakin (1974) A Sensitive and Rapid Method for the Determination of Trace Amounts of Selenium in Geological Materials, Journal of Research of the U. S. Geological Survey, 2: 483-487.
74BRA 03	D. V. Brady, J. Montalvo, J. Jung, and R. Curran (1974) Direct Determination of Lead in Plant Leaves via Graphite Furnace Atomic Absorption, Atomic Absorption Newsletter, 13: 118-119.	74DAU 01	E. H. Daughtrey and W. W. Harrison (1974) Analysis for Trace Levels of Boron by Ion-exchange Hollow Cathode Emission, Analytica Chimica Acta, 72: 225-230.
74BUS D2	K. W. Busch, W. G. Howell, and G. H. Morrison (1974) Elimination of Interferences in Flame Spectrometry using Spectral Stripping, Analytical Chemistry, 46: 2074-2079.	74DON D1	I. Y. Donev and L. M. Marichkova (1974) Determination of Elements in Standard Material (Bovine Liver SRM 1577), In 74LAF 01, pp. 1293-1303.
74BYR D1	A. R. Byrne (1974) Neutron Activation Analysis of Tin in Biological Materials and their Ash using Sn-113 and Sn-115, Journal of Radioanalytical Chemistry, 20: 627-637.	74ERD 01	G. Erdmann and O. Aboulwafa (1974) Selective Chemical Separation Procedures for Activation Analysis: II. Separation of Arsenic by Column Extraction with Tin(II)Ethylxanthate. Determination in Titanium Dioxide of High Antimony Content and in Biological Material, Fresenius Zeitschrift fur Analytische Chemie, 272: 105-114.
74BYR 02	F. P. Byrne (1974) The Analyst and Accuracy, in 74LAF 01, pp. 123-125.	74FEL D1	C. Feldman (1974) Perchloric Acid Procedure for Wet-ashing Organics for the Determination of Mercury (and Other Metals), Analytical Chemistry, 46: 1606-1609.
74BYR 03	A. R. Byrne and L. Kosta (1974) Simultaneous Neutron Activation Determination of Selenium and Mercury in Biological Samples by Volatilization, Talanta, 21: 1083-1090.	74FIT 01	W. F. Fitzgerald, W. B. Lyons, and C. D. Hunt (1974) Cold-trap Preconcentration Method for the Determination of Mercury in Sea Water and in Other Natural Materials, Analytical Chemistry, 46: 1882-1885.
74CAR D1	B. S. Carpenter and P. D. LaFleur (1974) Nitrogen Determination in Biological Materials by the Nuclear Track Technique, Analytical Chemistry, 46: 1112.	74FLO D1	T. M. Florence, Y. J. Farrar, L. Dale, and G. Batley (1974) Beryllium Content of NBS Standard Reference Orchard Leaves, Analytical Chemistry, 46: 1874-1876.
74CAR D2	B. S. Carpenter (1974) Lithium Determinations by the Nuclear Track Technique, Journal of Radioanalytical Chemistry, 19: 233-234.	74FRI D1	M. H. Friedman, E. Miller, and J. T. Tanner (1974) Instrumental Neutron Activation Analysis for Mercury in Dogs Administered Methylmercury Chloride: Use of a Low Energy Photon Detector, Analytical Chemistry, 46: 236-239.
74CAR 03	V. Caramella-Crespi, U. Pisani, M. T. Ganzerli-Valentini, S. Meloni, and V. Maxia (1974), Determination of Some Noble Metals and Copper by Destructive Neutron Activation Analysis of Different Matrices, Journal of Radioanalytical Chemistry, 23: 23-31.	74GAL 01	M. Gallorini and E. Orvini (1974) Determination of Zinc in Environmental Matrices: A Comparison of Results Obtained by Independent Methods, In 74LAF 01, pp. 239-245.
74CAR D5	B. S. Carpenter and G. M. Reimer (1974) Homogeneity Considerations in Trace Analysis using the Nuclear Track Technique, in 74LAF 01, pp. 457-459.	74GOE 01	J. J. M. de Goeij, V. Guinn, D. Young, and A. Mearns (1974) Neutron Activation Analysis Trace Element Studies of Dover Sole Liver and Marine Sediments, In Comparative Studies of Food and Environmental Contamination, Proceeding Series, International Atomic Energy Agency, Vienna, pp. 193-196.
74CHA 01	A. Chatopedhyay and R. E. Jervis (1974) Multielement Determination in Market-Garden Soils by Instrumental Photon Activation Analysis, Analytical Chemistry, 46: 1630-1639.	74GRO D1	S. B. Gross and E. S. Parkinson (1974) Analysis of Metals in Human Tissues using Base (TMAH) Digests and Graphite Furnace Atomic Absorption Spectrophotometry, Atomic Absorption Newsletter, 13:107-108.
74CHO 02	T. J. Chow, C. C. Patterson, and D. Settle (1974) Occurrence of Lead in Tuna, Nature, 251: 159-161.	74GUI D1	V. P. Guinn and R. Kishore (1974) Results from Multi-trace-element Neutron Activation Analyses of Marine Biological Specimens, Journal of Radioanalytical Chemistry, 19: 367-371.
74CHU 01	M. R. Church and W. H. Robinson (1974) A Rapid, Routine Atomic Absorption Spectrometry Method for the Determination of Selenium at Sub-microgram Levels in Animal Tissue, International Journal of Environmental Analytical Chemistry, 3: 323-331.	74HEM 01	D. D. Hemphill, editor (1974) Proceedings of the Eighth Annual Conference on Trace Substances in Environmental Health, University of Missouri, Columbia, Missouri.
74CHU 03	D. A. Church, T. Hadeishi, L. Leong, R. D. McLaughlin, and B. Zak (1974), Two-chamber Furnace for Flameless Atomic Absorption Spectrometry, Analytical Chemistry, 46: 1352-1355	74HEN 01	T. E. Henzler, R. J. Korda, P. A. Helmke, M. R. Anderson, M. M. Jimenez, and L. A. Haskin (1974), An Accurate Procedure for Multielement Neutron Activation Analysis of Trace Elements in Biological Materials, Journal of Radioanalytical Chemistry, 20: 649-663.
74COP D1	T. R. Copeland, R. A. Oysteryoung, and R. Skogerboe (1974) Elimination of Copper-Zinc Intermetallic Interferences in Anodic Stripping Voltammetry, Analytical Chemistry, 46: 2093-2097.		
74COR 01	R. F. Cormier (1974) Radiometric Age of the Keppoch Formation, Browns Mountain Group, Northern Mainland of Nova Scotia, Canadian Journal of Earth Sciences, 11: 1325-1329.		

CODE N	REFERENCE	CODE N	REFERENCE
74HEY 01	K. Heydorn (1974) Detection of Systematic Errors by the Analysis of Precision, In 74LAF 01, pp. 127-134.	74NAD 02	R. A. Nadkarni (1974) Re-evaluation of Arsenic Concentration in the Biological Standards, Radiochemical and Radioanalytical Letters, 19: 127-134.
74HIC 01	J. E. Hicks, J. E. Fleenor, and H. Smith (1974) The Rapid Determination of Sulfur in Coal, <i>Analytica Chimica Acta</i> , 68: 480-483.	74OND 01	J. M. Ondov, W. Zoller, I. Olmez, N. Aras, G. Gordon, L. Rancitelli, K. Abel, R. Filby, K. Shah, and R. Regaini (1974), Four-Laboratory Comparative Instrumental Nuclear Analysis of the NBS Coal and Fly Ash Standard Reference Materials, in 74LAF 01, pp. 211-218.
74HOF 01	G. L. Hoffman, P. R. Walsh, and M. P. Doyle (1974) Determination of a Geometry and Dead Time Correction Factor for Neutron Activation Analysis, <i>Analytical Chemistry</i> , 46: 492-496.	74ORV 01	E. Orvini, T. E. Gills, and P. O. LaFleur (1974) Method for Determination of Selenium, Arsenic, Zinc, Cadmium, and Mercury in Environmental Matrices by Neutron Activation Analysis, <i>Analytical Chemistry</i> , 46: 1294-1297.
74IHN 01	M. Ihnat and R. J. Westerby (1974) Application of Flameless Atomization to the Atomic Absorption Determination of Selenium in Biological Samples, <i>Analytical Letters</i> , 7: 257-265.	74RAI 01	T. C. Rains and O. Menis (1974) An Intercomparison of Flame and Nonflame Systems in Atomic Absorption Spectrometry, in 74LAF 01, pp. 1045-1051.
74IHN 02	M. Ihnat (1974) Collaborative Study of a Fluorimetric Method for Determining Selenium in Foods, <i>Journal of the Association of Official Analytical Chemists</i> , 57: 373-378.	74RAI 02	T. C. Rains, M. S. Epstein, and O. Menis (1974) Automatic Correction System for Light Scatter in Atomic Fluorescence Spectrometry, <i>Analytical Chemistry</i> , 46: 207.
74LAF 01	P. D. LaFleur, editor (1974) Accuracy in Trace Analysis: Sampling, Sample Handling, and Analysis, Proceedings of the Seventh IWR Symposium, National Bureau of Standards Special Publication 422.	74RAN 02	L. A. Rancitelli, J. Cooper, and R. Perkins (1974) Multielement Characterization of Atmospheric Aerosols by Neutron Activation and Direct Gamma-ray Analysis, and X-ray Fluorescence Analysis, in Comparative Studies of Food and Environmental Contamination, Proceedings Series, International Atomic Energy Agency, Vienna, pp. 440-444.
74LEI 01	O. W. Leisure and O. E. Olson (1974) Use of the AOAC Fluorometric Method for Selenium in Plants for the Analysis of Papers and Tobaccos, <i>Journal of the Association of Official Analytical Chemists</i> , 57: 658-661.	74RAV 01	V. Ravnik, M. Dermelj, and L. Kosta (1974) A Highly Selective Diethyldithiocarbamate Extraction System in Activation Analysis of Copper, Indium, Manganese, and Zinc: Application to the Analysis of Standard Reference Materials, <i>Journal of Radioanalytical Chemistry</i> , 20: 443.
74LI 01	R. T. Li and D. M. Hercules (1974) Determination of Chromium in Biological Samples using Chemiluminescence, <i>Analytical Chemistry</i> , 46: 916-919.	74REU 01	F. W. Reuter and W. L. Reynolds (1974) Title Unknown, in Protein-Metal Interactions, M. Friedman, editor, Plenum Press, New York, p. 621; taken from 78DAH 01.
74LIN 01	R. van der Linden, F. de Corte, and J. Hoste (1974) Activation Analysis of Biological Material with Ruthenium as a Multi-isotopic Comparator, <i>Analytica Chimica Acta</i> , 71: 263-275.	74RIC 01	E. Ricci, T. Handley, and F. Dyer (1974) Analysis of Traces at ORNL's New High-flux Neutron Activation Laboratory, <i>Journal of Radioanalytical Chemistry</i> , 19: 141-148.
74LOO 01	J. C. van Loon and E. J. Brooker (1974) A Simplified Method for Determining Arsenic and Antimony by the Hydride Evolution-Atomic Absorption Method, <i>Analytical Letters</i> , 7: 505-513.	74ROO 01	H. L. Rook, P. O. LaFleur and J. E. Suddeuth (1974) Trace Element Determination using a High Yield Electromagnetic Isotope Separator and Neutron Activation: The Determination of Cadmium, <i>Nuclear Instruments and Methods</i> , 116: 579-586.
74LUT 01	G. J. Lutz (1974) The Analysis of Biological and Environmental Samples for Lead by Photon Activation, <i>Journal of Radioanalytical Chemistry</i> , 19: 239-244.	74ROS 02	K. J. R. Rosman and J. R. de Laeter (1974) Mass Spectrometric Isotope Dilution Analyses of Cadmium in Standard Rocks, <i>Chemical Geology</i> , 13: 69-74.
74MAI 01	E. J. Maienthal (1974) The Application of Linear Sweep Voltammetry to the Determination of Trace Elements in Biological and Environmental Materials, In 74HEM 01, pp. 243-246.	74RUN 01	L. M. Rundle (1974) A Combustion Method for the Determination of Total Sulphur in Limestones, <i>Analyst</i> , 99: 163-165.
74MAS 01	R. Masironi (1974) Trace Elements in Relation to Cardiovascular Diseases, World Health Organization Status Report, WHO Offset Publication Number 5.	74SCH 03	R. Schelenz and J.-F. Diehl (1974) A Study into the Accuracy of a Remote-controlled System for Multielement Determination in Foodstuffs using NAA, in 74LAF 01, pp. 1173-1180.
74MCC 01	L. T. McClendon (1974) Selective Determination of Chromium in Biological and Environmental Matrices, in 74HEM 01, pp. 255-257.	74SHA 01	L. Shapiro (1974) Spectrophotometric Determination of Silica at High Concentrations using Fluoride as a Depolymerizer, <i>Journal of Research of the U. S. Geological Survey</i> , 2: 357.
74MOO 01	L. J. Moore, L. Machian, W. Shields, and E. Garner (1974) Internal Normalization Techniques for High Accuracy Isotope Dilution Analyses - Application to Molybdenum and Nickel in Standard Reference Materials, <i>Analytical Chemistry</i> , 46: 1082		

CODE N	REFERENCE	CODE N	REFERENCE
74SIE 02	D. Siemer and R. Woodriff (1974) Application of the Carbon Rod Atomizer to the Determination of Mercury in the Gaseous Products of Oxygen Combustion of Solid Samples, <i>Analytical Chemistry</i> , 46: 597-598.	75BLO 01	E. R. Blood and G. C. Grant (1975) Determination of Cadmium in Fish Tissue by Flameless Atomic Absorption with a Tantalum Ribbon, <i>Analytical Chemistry</i> , 47: 1438-1441.
74SLE 01	G. Slegers and A. Claeys (1974) Spectrophotometric Determination of Magnesium in Tobacco Leaves with Eriochrome Black B, <i>Analyst</i> , 99: 471-475.	75BLO 02	C. Block (1975) Determination of Lead in Coal and Coal Ashes by Flameless Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 80: 369-373.
74SWI 01	D. L. Swindle, L. R. Novak, and E. A. Schweikert (1974) Determination of Iron in Glass and Cobalt via Charged Particle Activation Analysis, <i>Analytical Chemistry</i> , 46: 655-658.	75BOL 01	B. A. Bolton and P. K. Hopke (1975) The Use of Instrumental Neutron Activation Analysis for the Determination of Arsenic Concentrations in Poultry, <i>Journal of Radioanalytical Chemistry</i> , 25: 299-302.
74TAL 01	Y. Talmi (1974) Determination of Zinc and Cadmium in Environmentally Based Samples by the Radiofrequency Spectrometric Source, <i>Analytical Chemistry</i> , 46: 1005-1010.	75BOL 02	H. J. Bollingberg (1975) Geochemical Prospecting using Seaweed, Shellfish and Fish, <i>Geochimica et Cosmochimica Acta</i> , 39: 1567-1570.
74TAL 02	Y. Talmi and A. W. Andren (1974) Determination of Selenium in Environmental Samples Using Gas Chromatography with a Microwave Emission Spectrometric Detection System, <i>Analytical Chemistry</i> , 46: 2122-2126.	75CAM 01	J. L. Campbell, B. H. Orr, A. W. Herman, L. A. McNeless, J. A. Thompson, and W. B. Cook (1975), Trace Element Analysis of Fluids by Proton-induced X-ray Fluorescence Spectrometry, <i>Analytical Chemistry</i> , 47: 1542-1553.
74TAM 01	N. Tamura (1974) Accuracy in the Nondestructive Neutron Activation Analysis of Coal and Beryllium for Minor and Trace Elements using Cobalt as a Flux Determinant, <i>Radiochemical and Radioanalytical Letters</i> , 18: 135-142.	75CAM 02	W. C. Campbell and J. M. Ottaway (1975) Determination of Lead in Carbonate Rocks by Carbon-furnace Atomic Absorption Spectrometry after Dissolution in Nitric Acid, <i>Talanta</i> , 22: 729-732.
74THO 01	J. Thomas and H. J. Gluskoter (1974) Determination of Fluoride in Coal with the Fluoride Ion-selective Electrode, <i>Analytical Chemistry</i> , 46: 1321.	75CAR 02	E. E. Cary and O. E. Olson (1975) Atomic Absorption Spectrophotometric Determination of Chromium in Plants, <i>Journal of the Association of Official Analytical Chemists</i> , 58: 433-435.
74ULL 01	P. A. Ullucci and J. Y. Hwang (1974) Determination of Cadmium in Biological Materials by Atomic Absorption, <i>Talanta</i> , 21: 745-750.	75EPS 01	M. S. Epstein, T. C. Rains, and O. Menis (1975) Determination of Cadmium and Zinc in Standard Reference Materials by Atomic Fluorescence Spectrometry with Automatic Scatter Correction, <i>Canadian Journal of Spectroscopy</i> , 20: 22-26.
74WAH 01	J. S. Wahlberg (1974) Unpublished data; quoted in 74CRE 01.	75FRO 01	J. Frost, P. Santoliquido, L. Camp, and R. Ruch (1975) Trace Elements in Coal by Neutron Activation Analysis with Radiochemical Separations, in 75BAB 01.
74WEA 01	J. N. Weaver (1974) Rapid, Instrumental Neutron Activation Analysis for the Determination of Uranium in Environmental Matrices, <i>Analytical Chemistry</i> , 46: 1292-1294.	75GLA 01	E. S. Gladney and H. L. Rook (1975) Simultaneous Determination of Tellurium and Uranium by Neutron Activation Analysis, <i>Analytical Chemistry</i> , 47: 1554.
74WES 01	H. Wesch and A. Bindl (1974) Analysis of 11 Elements in Biological Material: Comparison of Neutron Activation Analysis and Atomic Absorption Analysis, in 74LAF 01, pp. 231-235.	75GUL 01	V. P. Guinn, M. A. Purcell, and W. W. Wadman (1975) International Symposium on Development of Nuclear Based Techniques for Measurement, Detection, and Control of Environmental Pollutants, Vienna, IAEA-SM-206, Paper 30.
74WOL 01	W. R. Wolf and F. E. Greene (1974) Preparation of Biological Materials for Chromium Analysis, in 74LAF 01, pp. 605-610.	75HAG 01	L. Hageman, L. Torma, and B. Ginther (1975) Analysis of Feed Grains and Forages for Traces of Cobalt by Flameless Atomic Absorption Spectroscopy, <i>Journal of the Association of Official Analytical Chemists</i> , 58: 990-994.
75ABU 01	A. Abu-sama J. S. Morris, and S. R. Koirtyohann (1975) Wet Ashing of some Biological Samples in a Microwave Oven, <i>Analytical Chemistry</i> , 47: 1475-1477.	75HAL 01	C. Halvorsen and E. Steinnes (1975) Simple and Precise Determination of Zn and Cd in Human Liver by Neutron Activation Analysis, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 274: 199-202.
75AND 01	R. W. Andrews and D. C. Johnson (1975) Volammetric Deposition and Stripping of Selenium(IV) at a Rotating Gold-disk Electrode in 0.1 M Perchloric Acid, <i>Analytical Chemistry</i> , 47: 294-299.	75HEI 01	H. Heinrichs (1975) Determination of Mercury in Water, Rocks, Coal, and Petroleum with Flameless Atomic Absorption Spectrophotometry, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 273: 197-201.
75BAB 01	S. P. Babu, editor (1975) Trace Elements in Fuel, <i>Advances in Chemistry Series</i> 141, American Chemical Society, Washington, D.C.	75HIN 01	T. A. Hinners (1975) Atomic Absorption Analysis of Liver without Ashing, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 277: 377-378.
75BEH 01	D. Behne, P. Bratter, and W. Wolters (1975) Bestimmung von Blei in Biologischen Materialien mit Hilfe der flammenlosen Atomabsorptionsspektrometrie, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 277: 355-358.		

CODE	N	REFERENCE
75ISA	01	R. A. Isaac and W. C. Johnson (1975) Collaborative Study of Wet and Dry Ashing Techniques for the Elemental Analysis of Plant Tissue by Atomic Absorption Spectrophotometry, <i>Journal of the Association of Official Analytical Chemists</i> , 58: 436-440.
75JON	01	J. B. Jones (1975) Collaborative Study of the Elemental Analysis of Plant Tissue by Direct Reading Emission Spectroscopy, <i>Journal of the Association of Official Analytical Chemists</i> , 58: 764.
75JON	01	Ibid., Laboratory 1.
75JON	02	Ibid., Laboratory 2.
75JON	03	Ibid., Laboratory 3.
75JON	04	Ibid., Laboratory 4.
75JON	05	Ibid., Laboratory 5.
75JON	06	Ibid., Laboratory 6.
75JON	07	Ibid., Laboratory 7.
75JON	08	Ibid., Laboratory 8.
75JON	09	Ibid., Laboratory 9.
75JON	11	Ibid., Laboratory 11.
75JON	10	Ibid., Laboratory 10.
75KLE	01	O. H. Klein, A. Andren, J. Carter, J. Emery, C. Feldman, W. Fulekerson, W. Lyon, J. Ogle, Y. Talmi, R. van Hook, and W. Bolton (1975), Pathways of 37 Trace Elements through a Coal Fired Power Plant, <i>Environmental Science and Technology</i> 9: 973-978.
75KOI	01	H. Koizuma and K. Yasuda (1975) New Zeeman Method for Atomic Absorption Spectrophotometry, <i>Analytical Chemistry</i> , 47: 1679-1682.
75LIE	01	P. Lievens, R. Cornelis, and J. Hoste (1975) A Separation Scheme for the Determination of Trace Elements in Biological Materials by Neutron Activation Analysis, <i>Analytica Chimica Acta</i> , 80: 97-108.
75LIT	01	R. Litman, H. L. Finston, and E. T. Williams (1975) Evaluation of Sample Pretreatments for Mercury Determination <i>Analytical Chemistry</i> , 47: 2364-2369.
75MAN	01	D. C. Manning (1975) Aspirating Small Volume Samples in Flame Atomic Absorption Spectroscopy, <i>Atomic Absorption Newsletter</i> , 14: 99-102.
75MAZ	01	B. Maziere, J. Gros, and D. Comar (1975) Possibilites et Limites de l'Analyse d'Echantillons Biologiques par Activation Neutronique derriere Ecran de Cadmium, <i>Journal of Radioanalytical Chemistry</i> , 24: 279-293.
75MCG	01	J. R. McGinley and E. A. Schweikert (1975) Determination of Lithium, Boron, and Carbon by Quasi-prompt Charged Particle Activation Analysis, <i>Analytical Chemistry</i> , 47: 2403-2407.
75MIL	01	H. T. Millard and V. W. Swanson (1975) Neutron Activation Analysis of Coals using Instrumental Techniques, <i>Transactions of the American Nuclear Society</i> , 21: 108-109.

CODE	N	REFERENCE
75MUR	01	J. Murphy (1975) Determination of Mercury in Coals by Peroxide Digestion and Cold Vapor Atomic Absorption Spectrophotometry, <i>Atomic Absorption Newsletter</i> , 14: 151-152.
75NAD	02	R. A. Nadkarni (1975) Multielement Analysis of Coal and Coal Fly Ash Standards by Instrumental Neutron Activation Analysis, <i>Radiochemical and Radioanalytical Letters</i> , 21: 161-176.
75OLS	01	O. E. Olson, I. S. Palmer, and E. E. Cary (1975) Modification of the Official Fluorometric Method for Selenium in Plants, <i>Journal of the Association of Official Analytical Chemists</i> , 58: 117-121.
75OND	01	J. M. Ondov, W. Zoller, I. Olmez, N. Aras, G. Gordon, L. Rencitelli, K. Abel, R. Filby, K. Shah, and R. Ragaini (1975), Elemental Concentrations in the National Bureau of Standards Environmental Coal and Fly Ash Standard Reference Materials, <i>Analytical Chemistry</i> , 47: 1102-1109.
75OWE	01	J. W. Owens and E. S. Gladney (1975) Determination of Beryllium in Environmental Materials by Flameless Atomic Absorption Spectroscopy, <i>Atomic Absorption Newsletter</i> , 14: 76-77.
75PEC	01	E. S. Peck (1975) Spectrographic Determination of Mercury in Rocks and Coal, <i>Analytica Chimica Acta</i> , 80: 75-83.
75PIC	01	C. J. Pickford and G. Rossi (1975) Determination of Some Trace Elements in NBS (SRM-1577) Bovine Liver using Flameless Atomic Absorption and Solid Sampling, <i>Atomic Absorption Newsletter</i> , 14: 78-80.
75PIE	01	R. Pietra, E. Sabbioni, and F. Girardi (1975) Determination of Ca, Mg, Ni, and Si in Biological Materials by Neutron Activation and Cerenkov Counting, <i>Radiochemical and Radioanalytical Letters</i> , 22: 243-250.
75POL	01	E. W. Pollock (1975) Trace Impurities in Coal by Wet Chemical Methods, in 75BAB 01.
75PUF	01	J. H. Puffer and R. S. Cohen (1975) Field Determination of Sodium and Potassium in Feldspars by Ion-selective Electrodes, <i>Chemical Geology</i> , 15: 217-222.
75REU	01	F. W. Reuter (1975) Numerical Matrix Correction Technique for the Measurement of Trace Elements in Plant Materials by X-ray Fluorescence Spectrometry, <i>Analytical Chemistry</i> , 47: 1763-1766.
75RIC	01	E. Ricci (1975) Methodology for High-flux Absolute Multielement Neutron Activation Analysis: Environmental Baselines by Analysis of Tree Rings, <i>Analytica Chimica Acta</i> , 79: 109-124.
75RUC	01	R. R. Ruch, R. Cahill, and J. Frost (1975) Trace Elements in Coals of the United States Determined by Activation Analysis and Other Techniques, <i>Transactions of the American Nuclear Society</i> , 21: 107-108.
75SIE	01	D. D. Siemer and L. Hagemann (1975) An Improved Hydride Generation-Atomic Absorption Apparatus for Selenium Determination, <i>Analytical Letters</i> , 8: 323-337.
75SLA	01	S. Slavin, G. E. Peterson, and P. C. Lindahl (1975) Determination of Heavy Metals in Meats by Atomic Absorption Spectroscopy, <i>Atomic Absorption Newsletter</i> , 14: 57-59.

CODE N	REFERENCE	CODE N	REFERENCE
75SME 01	J. Smeyers-Vebede, G. Segebarth, and D. L. Massart (1975) The Determination of Cu and Mn in Small Biological Samples with Graphite Furnace Atomic Absorption Spectrometry, <i>Atomic Absorption Newsletter</i> , 14: 153-154.	76DIK 01	M. Diksic and M. O. McCrady (1976) <i>Fast Determination of Selenium in Biological Materials by Instrumental Neutron Activation Analysis, Radiochemical and Radioanalytical Letters</i> , 26: 89-94.
75STE 02	E. Steinnes (1975) A Two-group Separation Scheme for the Determination of 11 Trace Elements in Biological Material by Neutron Activation Analysis, <i>Analytica Chimica Acta</i> , 78: 307-315.	76DOG 01	S. Dogan and W. Haerdi (1976) <i>Some Applications of Rapid Separation of Mercury on Metallic Copper to Environmental Samples with Determination by Flameless Atomic Absorption Spectrometry, Analytica Chimica Acta</i> , 84: 89-96.
75TAL 01	Y. Talmi and V. E. Norvell (1975) Determination of Arsenic and Antimony in Environmental Samples using Gas Chromatography with a Microwave Emission Spectrometric System, <i>Analytical Chemistry</i> , 47: 1510-1516.	76EPS 01	M. S. Epstein, T. C. Rains, and T. C. O'Haver (1976) <i>Wavelength Modulation for Background Correction in Graphite Furnace Atomic Emission Spectrometry, Applied Spectroscopy</i> , 30: 324-329.
75THO 01	C. P. Thomas (1975) An Integrated Intensity Method for Emission Spectrographic Computer Analysis, <i>Journal of Research of the United States Geological Survey</i> , 3: 181-185.	76EPS 02	M. S. Epstein (1976) Private Communication, National Bureau of Standards; taken from 76ZAN 01.
75WEL 02	R. M. Welch and E. E. Cary (1975) Title unknown, in <i>Journal of Agricultural and Food Chemistry</i> , 23: 479; taken from 78BYR 01.	76FIO 01	J. A. Fiorino, J. W. Jones, and S. G. Capar (1976) <i>Sequential Determination of Arsenic, Selenium, Antimony, and Tellurium in Foods via Rapid Hydride Evolution and Atomic Absorption Spectrometry, Analytical Chemistry</i> , 48: 120-125.
75WIM 01	J. W. Wimberley (1975) The Determination of Total Mercury at the Part-Per-Billion Level in Soils, Ores, and Organic Materials, <i>Analytica Chimica Acta</i> , 76: 337-343.	76FUK 01	H. Fukami, S. Toda, and K. Fuwa (1976) Development of a New Type Low Temperature Asher for Small Amounts of Biological Sample, <i>Bunseki Kagaku</i> , 25: 282-284.
75WOR 01	G. J. Worrell, T. J. Vickers, and F. D. Williams (1975) A Solvent Extraction-Atomic Fluorescence System for the Determination of Cadmium in Complex Samples, <i>Analytica Chimica Acta</i> , 75: 453-456.	76GAL 01	M. Gallorini, M. diCasa, R. Stella, N. Genova, and E. Orvini (1976), Multielement Trace Analysis by Atomic Absorption Spectrometry and Neutron Activation Analysis in Biological Matrices, <i>Journal of Radioanalytical Chemistry</i> , 32: 17-23.
76AGG 01	J. Aggett and A. C. Aspell (1976) The Determination of Arsenic(III) and Total Arsenic by Atomic Absorption Spectroscopy, <i>Analyst</i> , 101: 341-347.	76GAN 01	R. Ganapathy, G. M. Papia, and L. Grossman (1976) <i>The Abundances of Zirconium and Hafnium in the Solar System, Earth and Planetary Science Letters</i> , 29: 302-308.
76AND 01	R. W. Andrews and D. C. Johnson (1976) Determination of Selenium(IV) by Anodic Stripping Voltammetry in Flow System with Ion Exchange Separation, <i>Analytical Chemistry</i> , 48: 1056-1060.	76GAU 01	A. Gaudry, B. Maziere, D. Comar, and D. Nau (1976) <i>Multielement Analysis of Biological Samples after Intense Neutron Irradiation and Fast Chemical Separation, Journal of Radioanalytical Chemistry</i> , 29: 77-87.
76BAT 01	L. C. Bate, S. E. Lindberg, and A. W. Andren (1976) Elemental Analysis of Water and Air Solids by Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 32: 125-135.	76GLA 01	E. S. Gladney, E. T. Jurney, and D. B. Curtis (1976) <i>Nondestructive Determination of Boron and Cadmium in Environmental Materials by Thermal Neutron-Prompt Gamma-ray Spectrometry, Analytical Chemistry</i> , 48: 2139-2142.
76BLO 01	C. Block, R. Dams, and J. Hoste (1976) Chemical Composition of Coal and Fly Ash, in 76IAE 01, pp. 101-110.	76GLA 02	E. S. Gladney and J. W. Owens (1976) <i>Beryllium Emission from a Coal-fired Power Plant, Journal of Environmental Science and Health</i> , A11: 297-311.
76CAV 01	P. Cavalli and G. Rossi (1976) Determination of Submicrogram Amounts of Mercury in Various Matrices by Flameless Atomic Fluorescence Spectrometry, <i>Analyst</i> , 101: 272-277.	76GUI 01	V. P. Guinn, M. A. Purcell, and W. W. Wedman (1976) <i>Measurement of Vanadium in Oceanographic/Environmental Samples by Neutron Activation Analysis with Pre-irradiation Separation, in 76IAE 01, pp. 407-412.</i>
76CHA 01	A. Chattopadhyay (1976) Multielement Instrumental Photon Activation Analysis of Digested Sewage Sludges, in 76IAE 01, pp. 383-403.	76GUZ 01	G. Guzzi, R. Pietra, and E. Sabbioni (1976) <i>Determination of 25 Elements in Biological Standard Reference Materials by Neutron Activation Analysis, Journal of Radioanalytical Chemistry</i> , 34: 35-57.
76CHA 02	C. C. Y. Chan (1976) Improvement in the Fluorometric Determination of Selenium in Plant Materials with 2,3-Diaminonaphthalene, <i>Analytica Chimica Acta</i> , 82: 213-315.	76HAD 01	T. Hadeishi and R. D. McLaughlin (1976) <i>Zeeman Atomic Absorption Determination of Lead with a Dual Chamber Furnace, Analytical Chemistry</i> , 48: 1009-1011.
76DER 01	M. Dermelj, V. Ravnik, and L. Kosta (1976) A Fast Isolation and Determination of Cd in Some Fungi, Other Biological Materials, Soil, and Zn Metal by NAA, <i>Radiochemical and Radioanalytical Letters</i> , 24: 91-102.	76HAN 01	R. G. V. Hancock (1976) <i>Low Flux Multielement Instrumental Neutron Activation Analysis in Archaeometry, Analytical Chemistry</i> , 48: 1443.

- 76HOW 01 N. G. Nowell, J. D. Ganjei, and G. W. Morrison (1976)  
Internal Standardization in Flame Analyses using a Vidicon Spectrometer, *Analytical Chemistry*, 48: 319-326.
- 76IAE 01 International Atomic Energy Agency (1976)  
Proceedings of an International Symposium on the Development of Nuclear-based Techniques for the Measurement, Detection, and Control of Environmental Pollutants, Vienna.
- 76IHN 01 M. Ihnat (1976)  
Atomic Absorption Spectrometric Determination of Selenium with Carbon Furnace Atomization, *Analytica Chimica Acta*, 82: 293-309.
- 76IHN 02 M. Ihnat (1976)  
Selenium in Foods: Evaluation of Atomic Absorption Spectrometric Techniques involving Hydrogen Selenide Generation and Carbon Furnace Atomization, *Journal of the Association of Official Analytical Chemists*, 59: 911-922.
- 76KAT 02 T. Kato, M. Masumoto, N. Sato, and N. Suzuki (1976)  
The Yields of Photonuclear Reactions for Multielement Photon Activation Analysis, *Journal of Radioanalytical Chemistry*, 32: 51-70.
- 76KAT 03 T. Kato, N. Sato, and N. Suzuki (1976)  
Nondestructive Multielement Photoactivation Analysis of Environmental Materials, *Talanta*, 23: 517-524.
- 76KAT 04 T. Kato, N. Sato, and N. Suzuki (1976)  
Multielement Photon Activation Analysis of Biological Materials, *Analytica Chimica Acta*, 81: 337-347.
- 76KOI 01 H. Koizumi and K. Yusuda (1976)  
Determination of Lead, Cadmium, and Zinc using the Zeeman Effect in Atomic Absorption Spectrometry, *Analytical Chemistry*, 48: 1178-1182.
- 76KRI 03 K. V. Krishnamurti, E. Shprit, and M. M. Reddy (1976)  
Trace Metal Extraction of Soils and Sediments by Nitric Acid-Hydrogen Peroxide, *Atomic Absorption Newsletter*, 15: 68-70.
- 76KUC 01 E. T. Kucera and R. R. Weinrich (1976)  
Multielement Trace Analysis of Coals, Ashes, and Related Materials from Coal-Treatment Facilities by Instrumental Neutron Activation Analysis, *Journal of Radioanalytical Chemistry*, 32: 137-150.
- 76LAN 01 F. J. Langmyhr and J. Aamodt (1976)  
Atomic Absorption Spectrometric Determination of Some Trace Metals in Fish Meal and Bovine Liver by the Solid Sampling Technique, *Analytica Chimica Acta*, 87: 483-486.
- 76LEO 02 L. Leoni and M. Saitta (1976)  
X-ray Fluorescence Analysis of 29 Trace Elements in Rock and Mineral Standards, *Rendiconti Soc. Italiana di Mineralogia e Petrologia*, 32: 497-510.
- 76MCC 03 M. T. McCulloch, J. R. de Laeter, and K. J. R. Rosman (1976)  
The Isotopic Composition and Elemental Abundance of Lutetium in Meteorites and Terrestrial Samples and the Lu-176 Cosmochronometer, *Earth and Planetary Science Letters*, 28: 308-322.
- 76MEL 01 S. Meloni, V. Caramella-Crespi, M. T. Ganzerli-Valentini, and P. Borroni (1976), Accurate Determination of Arsenic and Mercury in Reference Materials by Destructive Neutron Activation Analysis, *Radiochemical and Radioanalytical Letters*, 25: 117-128.

- 76MEL 03 S. Meloni, V. Caramella-Crespi, and G. Fassi (1976)  
Determination of Some Bioelements in Rice Grains by Neutron Activation Analysis, *Journal of Radioanalytical Chemistry*, 34: 113-119.
- 76MIL 02 D. A. Miller and V. P. Guinn (1976)  
Precision High-speed Neutron Activation Analysis via Very Short-Lived Activities, *Journal of Radioanalytical Chemistry*, 32: 179-188.
- 76OND 01 J. M. Ondov, R. Regaini, R. Heft, G. Fisher, O. Silberman, and B. Prentice (1976), Interlaboratory Comparison of Neutron Activation and Atomic Absorption Analysis of Size Classified Stack Fly Ash, in *Methods and Standards for Environmental Measurement, Proceedings of the Eighth IHR Symposium*, Geithersburg, Maryland, National Bureau of Standards Special Publication 464, pp. 565-569.
- 76OWE 01 J. W. Owens and E. S. Gladney (1976)  
Lithium Metaborate Fusion and the Determination of Trace Metals in Fly Ash by Flameless Atomic Absorption, *Atomic Absorption Newsletter*, 15: 95-97.
- 76PIE 01 J. O. Pierce, F. Lichte, C. Vogt, A. Abu-Sarma, T. Ryan, S. Koirtyohann, and J. Vogt (1976), Comparison of Chromium Determinations in Environmental and Biological Samples by Neutron Activation Analysis, Atomic Absorption, and Gas Chromatography, in 76IAE 01, pp. 357-368.
- 76RAG 01 R. C. Regaini, R. E. Heft, and D. Garvis (1976)  
Neutron Activation Analysis at the Livermore Pool-Type Reactor for the Environmental Research Program, Lawrence Livermore Laboratory report UCRL-52092.
- 76SIE 01 D. O. Siemer, P. Koteel, and V. Jariwala (1976)  
Optimization of Arsine Generation in Atomic Absorption Arsenic Determinations, *Analytical Chemistry*, 48: 836-840.
- 76STE 01 R. Stella, N. Genova, M. di Casa, M. Gallorini, and E. Orvini (1976), Comparative Investigation of Different Radiochemical Methods for Chromium Determination in Biological and Environmental Matrices, *Journal of Radioanalytical Chemistry*, 34: 59-63.
- 76STE 05 E. Steinnes (1976)  
Instrumental Activation Analysis of Coal and Fly Ash with Thermal and Epithermal Neutrons and Short-Lived Nuclides, *Analytica Chimica Acta*, 87: 451-462.
- 76URE 01 A. M. Ure and H. C. Mitchell (1976)  
The Determination of Cadmium in Plant Material and Soil Extracts by Solvent Extraction and Atomic Absorption with a Carbon-rod Atomizer, *Analytica Chimica Acta*, 87: 283-290.
- 76VIJ 01 P. N. Vijan and G. R. Hood (1976)  
Semi-automated Determination of Lead by Hydride Generation and Atomic Absorption Spectrophotometry, *Analyst*, 101: 966.
- 76VIJ 02 P. N. Vijan, A. C. Rayner, D. Sturgis, and G. R. Hood (1976)  
A Semi-automated Method for the Determination of Arsenic in Soil and Vegetation by Gas-phase Sampling and Atomic Absorption Spectrophotometry, *Analytica Chimica Acta*, 82:329
- 76WAU 01 R. D. Wauchope (1976)  
Atomic Absorption Determination of Trace Quantities of Arsenic: Application of a Rapid Arsine Generation Technique to Soil, Water, and Plant Samples, *Atomic Absorption Newsletter*, 15: 64-67.

CODE N	REFERENCE	CODE N	REFERENCE
76EW 01 E. W. Wewerka (1976)	Trace Element Characterization and Removal/Recovery from Coal and Coal Wastes, Los Alamos Scientific Laboratory report LA-6498-PR.	77BYR 01 A. R. Byrne (1977)	Activation Analysis of Tin at Nanogram Levels by Liquid Scintillation Counting of Sn-113, Journal of Radioanalytical Chemistry, 37: 591-597.
76WHI 01 D. Whitehead and S. A. Malik (1976)	Automated Colorimetric Determination of Phosphorus in Silicate Rocks in the Presence of Silicon, Analyst, 101: 485-490.	77CAH 01 R. A. Cahill (1977)	Title Unknown, taken from 77GLU 01.
76WIL 01 D. R. Williams and J. S. Hislop (1976)	Determination of Copper and Zinc in Bone Ash using Accelerator Produced Gamma Photons, Proceedings of the Analytical Division of the Chemical Society (London), 13:202.	77CAM 01 J. L. Campbell (1977)	Specimen Preparation in PIXE Analysis, Nuclear Instruments and Methods, 142: 263-273.
76WOL 01 W. R. Wolf (1976)	Coupled Gas Chromatography - Atomic Absorption Spectrometry for the Nanogram Determination of Chromium, Analytical Chemistry, 48: 1717-1720.	77CHA 01 A. Chattopadhyay (1977)	Optimal use of Instrumental Neutron and Photon Activation Analysis for Multielement Determinations in Sewage Sludges, Journal of Radioanalytical Chemistry, 37: 785-799.
76ZAN 01 A. T. Zander, T. C. O'Haver, and P. W. Keliher (1976)	Continuum Source Atomic Absorption Spectrometry with High Resolution and Wavelength Modulation, Analytical Chemistry, 48: 1166-1175.	77CRO 01 J. B. Cross, R. Zeisler, and E. A. Schweikert (1977)	High Energy Heavy-Ion Induced X-ray Emission Analysis, Nuclear Instruments and Methods, 142: 111-119.
76ZAN 02 A. T. Zander and T. C. O'Haver (1976)	Improved Accuracy in Background Corrected Atomic Absorption Spectrometry, in Methods and Standards for Environmental Measurement, Proceedings of the Eight IMR Symposium, Gaithersburg, Maryland, National Bureau of Standards Special Publication 464, pp. 53-59.	77DER 01 M. Dermelj, V. Ravnik, and L. Kosta (1977)	Simultaneous Determination of Trace Elements Cd, Cu, and Zn in Different Environmental Samples by Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 28: 231
76ZEI 01 R. Zeisler, J. B. Cross, and E. A. Schweikert (1976)	Trace Elemental Analysis by Heavy Ion Induced X-ray Emission Analytical Chemistry, 48: 2124-2129.	77DIK 01 M. Diksic and T. F. Cole (1977)	Fast Determination of Molybdenum and Tellurium by Neutron Activation Analysis, Analytica Chimica Acta, 93: 261-266.
77AND 01 W. L. Anderson and K. E. Smith (1977)	Dynamics of Mercury at Coal-Fired Power Plant and Adjacent Cooling Lake, Environmental Science and Technology, 11: 75.	77DON 01 D. L. Donohue, J. A. Carter, and J. C. Franklin (1977)	Separated Isotopes as Internal Standards in Spark Source Mass Spectrometry, Analytical Letters, 10: 371-379.
77ARU 01 P. Aruscavage (1977)	Determination of Arsenic, Antimony, and Selenium in Coal by Atomic Absorption Spectrometry with a Graphite Tube Atomizer, Journal of Research of the U. S. Geological Survey, 5: 405.	77EGA 01 A. Egan, S. A. Kerr, and M. J. Minski (1977)	Determination of Selenium in Biological Materials using Se-75m and Cyclic Activation Analysis, Radiochemical and Radioanalytical Letters, 28: 369-378.
77BAJ 02 S. Bajo and A. Wyttenbach (1977)	Liquid-Liquid Extraction of Cadmium with Diethyldithiocarbamic Acid, Analytical Chemistry, 49: 158-161.	77FEL 01 C. Feldman (1977)	Determination of Traces of Arsenic in Siliceous Materials, Analytical Chemistry, 49: 825-828.
77BAN 03 S. Bando and T. Inahashi (1977)	Determination of Arsenic, Mercury, and Selenium in Biological Standard Reference Materials by Neutron Activation Analysis, Bunseki Kagaku, 26: 138-140.	77FIL 01 R. H. Filby, K. R. Shah, and C. A. Sautter (1977)	A Study of Trace Element Distribution in the Solvent Refined Coal Process using Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 37: 693-704.
77BRU 01 H. J. Brunsack (1977)	Potential Metal Pollution in Grass and Soil Samples around Brickworks, Environmental Geology, 2: 33-41.	77FLA 01 F. J. Flanagan, L. Schwartz, J. Rowe, and A. Dorrzapf (1977)	Available Clay and Feldspar Reference Samples as Standards for Archaeological Pottery Studies, Geostandards Newsletter, 1: 61-66.
77BUO 01 J. A. Buono, J. C. Buono, and J. L. Fasching (1977)	Simultaneous Determination of Al, V, Mn, and Cu from Neutron-Activated Saline Matrices by Precipitation with Poly-5-vinyl-8-hydroxyquinoline, Journal of Radioanalytical Chemistry, 36: 353-358.	77FLO 01 T. Florkowski, T. Kuc, and S. Piorek (1977)	Determination of Trace Elements in Plants by the X-ray Fluorescence Analysis of Environmental Pollution Investigations, International Journal of Applied Radiation and Isotopes, 28: 679-686.
77BUR 01 W. R. Burke and B. I. Diamondstone (1977)	Procedures for the Determination of Arsenic, Copper, and Nickel by Molecular Absorption Spectrometry, in 77MAV 01, pp. 73-84.	77FRI 01 M. T. Friend, C. A. Smith, and D. Wishart (1977)	Ashing and Wet Oxidation Procedures for the Determination of Some Volatile Trace Metals in Foodstuffs and Biological Materials by AAS, Atomic Absorption Newsletter, 16: 46-49.
		77FRY 01 R. C. Fry and M. B. Denton (1977)	High Solids Sample Introduction for Flame Atomic Absorption Analysis, Analytical Chemistry, 49: 1413-1417.
		77FUJ 01 K. Fujiwara, Y. Umezawa, U. Numata, and K. Fuwa (1977)	Carbon Rod Atomic Absorption for Intact Cell Systems and Biological Tissues, Bunseki Kagaku, 26: 735-737.

CODE N	REFERENCE
77GAN 03	S. Gangadharan, M. S. Das, and S. Yegnasubramanian (1977) Measurement of Annihilation Radiation in Activation Analysis Enhancement of Specificity through Triple Coincidence, Journal of Radioanalytical Chemistry, 37: 181-187.
77GIA 01	R. D. Giauque, R. B. Garrett, and L. Y. Goda (1977) Determination of Forty Elements in Geochemical Samples and Coal Fly Ash by X-ray Fluorescence Spectrometry, Analytical Chemistry, 49: 1012-1017.
77GIA 02	R. D. Giauque (1977) Private Communication, Lawrence Berkeley Laboratory.
77GIL 01	T. E. Gills and L. T. McClendon (1977) Role of Neutron Activation Analysis in the Evaluation of Sampling, Storage, and Analysis of Samples for the National Environmental Banking System, Journal of Radioanalytical Chemistry, 39: 285-291.
77GIL 03	T. E. Gills, M. Gallorini, and R. R. Greenberg (1977) The Determination of Selected Toxic Elements in Biological Matrices using Radiochemical Activation Analysis, in 77VOG 01, pp. 597-609.
77GLA 01	E. S. Gladney (1977) Copper Determination in Standard Materials by Neutron Activation and Srافion NRRL Anion-Exchange Resin, Analytica Chimica Acta, 91: 353-356.
77GLA 02	E. S. Gladney (1977) Direct Determination of Beryllium in NBS SRM 1632 Coal by Flameless Atomic Absorption, Atomic Absorption Newsletter, 16: 42-43.
77GLA 03	E. S. Gladney and J. W. Owens (1977) Determination of Mercury by Carrier-Free Combustion Separation and Flameless Atomic Absorption Spectrometry, Analytica Chimica Acta, 90: 271-274.
77GLU 01	H. J. Gluskoter, R. Ruch, W. Miller, R. Cahill, G. Dreher, and J. Kuhn (1977), Trace Elements in Coal: Occurrence and Distribution, Illinois State Geological Survey circular 499.
77GOO 01	G. C. Goode, J. Herrington, and P. C. Goddard (1977) Neutron Activation Analysis for Aluminium in Bone and Tissue Samples, Radiochemical and Radioanalytical Letters, 31: 87-94.
77GUI 02	V. P. Guinn and D. A. Miller (1977) Recent Instrumental Neutron Activation Analysis Studies Utilizing Very Short-lived Activities, Journal of Radioanalytical Chemistry, 37: 313-324.
77GUI 03	V. P. Guinn, E. R. Christensen, and K. de Lancey (1977) Neutron Activation Analysis Trace Element Studies in Connection with the Offshore Drilling for Oil, in 77VOG 01, pp. 303-311.
77GUL 01	B. L. Gulson (1977) Isotopic and Geochemical Studies on Crustal Effects in the Genesis of the Woodlawn Pb-Zn-Cu Deposit, Contributions to Mineralogy and Petrology, 65: 227-242.
77GUZ 01	G. Guzzi, A. Colombo, F. Girardi, R. Pietra, G. Rossi, and N. Toussaint (1977), Comparison of Various Analytical Techniques for Homogeneity Test of Candidate Standard Reference Materials, Journal of Radioanalytical Chemistry, 39: 263-276.

CODE N	REFERENCE
77HAM 01	H. Hamaguchi, Y. Numata, S. Iwata, M. Koyama, K. Sasajima, Y. Katayama, T. Takeuchi, M. Shinogi, T. Mamuro, Y. Kusaka, H. Tsuji, T. Tamari, T. Sagawa, S. Ohmori, S. Nagatsuka, Y. Tanizaki, T. Susuki, K. Tomura, Y. Hashimoto, S. Bando, and T. Imahashi (1977), Precision of Neutron Activation Analysis for Environmental Biological Materials, Bunseki Kagaku, 26: T23-T28.
77HAM 04	L. G. Hambleton (1977) Semiautomated Method for Simultaneous Determination of Phosphorus, Calcium, and Crude Protein in Animal Feeds, Journal of the Association of Official Analytical Chemists, 60: 845-852.
77HAM 02	M. A. Haney (1977) Title Unknown, Journal of Forensic Science, 22: 534; taken from 80KAN 01.
77HEY 01	K. Heydorn, Z. Z. Skanborg, R. Gowdz, J. O. Schmidt, and M. E. Wacks (1977), Determination of Lithium by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 37: 155-168.
77HOP 01	D. M. Hopkins (1977) An Improved Ion Selective Electrode Method for the Rapid Determination of Fluorine in Rocks and Soils, Journal of Research of the U.S. Geological Survey, 5: 589-593.
77IHN 01	M. Ihnat and H. J. Miller (1977) Acid Digestion, Hydride Evolution Atomic Absorption Spectrophotometric Method for Determining Arsenic and Selenium in Foods: Collaborative Study, Part I, Journal of the Association of Official Analytical Chemists, 60: 1414-1433.
77IHN 03	M. Ihnat and H. J. Miller (1977) Analysis of Foods for Arsenic and Selenium by Acid Digestion Hydride Evolution Atomic Absorption Spectrophotometry, Journal of the Association of Official Analytical Chemists, 60: 813-825.
77JER 01	R. E. Jervis, B. Tiefenbach, and A. Chattopadhyay (1977) Scalp Hair as a Monitor of Population Exposure to Environmental Pollutants, Journal of Radioanalytical Chemistry, 37: 751-760.
77JUR 01	E. T. Jurney, D. B. Curtis, and E. S. Gladney (1977) Determination of Sulfur in Environmental Materials by Thermal Neutron Capture Prompt Gamma-ray Spectrometry, Analytical Chemistry, 49: 1741-1743.
77JUR 02	H. Jurgensen and D. Behne (1977) . Variations in Trace Element Concentrations in Human Blood Serum in the Normal State Investigated by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 37: 375-382.
77KON 01	N. K. Konanur and G. W. van Loon (1977) Determination of Lead and Antimony in Firearm Discharge Residues on Hands by Anodic Stripping Voltammetry, Talanta, 24: 184-187.
77KUS 01	Y. Kusaka, H. Tsuji, Y. Tamari, T. Sagawa, S. Ohmori, S. Imai, and T. Ozaki (1977), Neutron Activation Analysis of Biologically Essential Trace Elements in Environmental Specimens using Pyrrolidinedithiocarbamate Extraction, Journal of Radioanalytical Chemistry, 37: 917-926.

CODE	N	REFERENCE	CODE	N	REFERENCE
77LAD	D1	W. Ladisch and J. D. van der Laarse (1977) The Determination of Total Sulphur in Coal by a Semi-micro Tube Combustion Method, <i>Analytica Chimica Acta</i> , 94: 213-216.	77NIE	01	K. K. Nielson (1977) Matrix Corrections for Energy Dispersive X-ray Fluorescence Analysis of Environmental Samples with Coherent/Incoherent Scattered X-rays, <i>Analytical Chemistry</i> , 49: 641-648.
77LAN	01	J. Lange and H.-J. Brumsack (1977) Total Sulphur Analysis in Geological and Biological Material by Coulometric Titration Following Combustion, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 286: 361-366.	77OHL	01	O. A. Ohlweiler and J. O. Meditsch (1977) Determination of Silica in Silicates by Formation of 12-Molybdate-Silicic Acid and Redox Titration of Molybdenum(III), <i>Talanta</i> , 24: 652-654.
77LAU	01	J. C. Laul and L. A. Rancitelli (1977) Multielement Analysis by Sequential Instrumental and Radiochemical Neutron Activation, <i>Journal of Radioanalytical Chemistry</i> , 38: 461-475.	77OMI	01	J. Omi and Y. Hashimoto (1977) Post-Irradiation Chemistry of Selenium in Neutron Activation Analysis, <i>Bunseki Kagaku</i> , 26: 419-421.
77LAU	02	J. C. Laul, K. K. Nielson, and N. A. Wogman (1977) Trace Rare Earth Analysis by Neutron Activation and Gamma-ray/X-ray Spectrometry, in 77VOG 01, pp. 198-209.	77OSB	01	T. W. Osborn and W. B. Broering (1977) Neutron Activation Analysis in an Industrial Laboratory using an Off-site Nuclear Reactor, in 77VOG 01, pp. 185-197.
77LIE	D1	P. Lievens, J. Versieck, R. Cornelis, and J. Hoste (1977) The Distribution of Trace Elements in Normal Human Liver Determined by Semi-automated Radiochemical Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 37: 483-496.	77PAC	01	Petrol. Assoc. Conserv. Can. Envir. (1977) Title Unknown, PACE report no. 77-5; taken from 78BER 02.
77LOR	01	D. A. Lord, J. W. McLaren, and R. C. Wheeler (1977) Determination of Trace Metals in Fresh Water Mussels by Atomic Absorption Spectrometry with Direct Solid Sample Injection, <i>Analytical Chemistry</i> , 49: 257-261.	77PAU	D1	P. J. Paulsen (1977) Spark Source Mass Spectrometric Isotope Dilution Determination of Cd, Cu, Fe, Pb, Hg, Mo, Ni, Se, Ag, Te, Tl, and Zn, in 77MAV 01, pp. 33-48.
77MAE	01	W. Maenhaut and W. H. Zoller (1977) Determination of the Chemical Composition of the South Pole Aerosol by Instrumental Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 37: 637-650.	77PIL	01	A. Pilate, P. Geladi, and F. Adams (1977) Determination of Aluminium in Aerosols by Flameless Atomic Absorption Spectrometry, <i>Talanta</i> , 24: 512-514.
77MAI	01	E. J. Mainethal (1977) Analysis of Botanical Standard Reference Materials by Cathode Ray Polarography, in 77MAV D1, pp. 91-105.	77POO	01	C. F. Poole, N. J. Evans, and D. G. Wibberley (1977) Determination of Selenium in Biological Samples by Gas-liquid Chromatography with Electron Capture Detection, <i>Journal of Chromatography</i> , 136: 73-83.
77MAV	01	R. Mavrodineanu, editor (1977) Procedures used at the National Bureau of Standards to Determine Selected Trace Elements in Biological and Botanical Materials, <i>NBS Special Publication 492</i> .	77RAI	01	R. M. Raie and H. Smith (1977) The Determination of Selenium in Biological Material by Thermal Neutron Activation Analysis, <i>Radiochemical and Radioanalytical Letters</i> , 28: 215-220.
77MEL	D1	S. Meloni and M. T. Ganzerli-Valentini (1977) New Improved Chemical Procedures in the Neutron Activation Analysis of Environmental Samples, in 77VOG 01, pp. 161-169.	77RIN	01	H. A. van Rinsvelt, R. D. Lear, and W. R. Adams (1977) Human Diseases and Trace Elements: Investigations by Proton Induced X-ray Emission, <i>Nuclear Instruments and Methods</i> , 142: 171-180.
77MIN	01	M. J. Minski, C. A. Girling, and P. J. Peterson (1977) Determination of Gold and Arsenic in Plant Materials by Neutron Activation Analysis, <i>Radiochemical and Radioanalytical Letters</i> , 30: 179-186.	77ROO	D1	H. L. Rook (1977) The Determination of Iodine in Biological and Environmental Standard Reference Materials, <i>Journal of Radioanalytical Chemistry</i> , 39: 351-358.
77MIT	01	J. W. Mitchell, L. D. Blitzer, T. Y. Kometani, T. Gills, and L. Clark (1977), Homogeneously Doped Silica Matrices for Trace Element Standards in Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 39: 335-342.	77ROO	02	H. L. Rook (1977) Rapid, Quantitative Separation for the Determination of Selenium using Neutron Activation Analysis, in 77MAV 01, pp. 26-32.
77MYR	01	D. R. Myron, S. H. Givand, and F. H. Nielsen (1977) Vanadium Content of Selected Foods as Determined by Flameless Atomic Absorption Spectroscopy, <i>Journal of Agricultural and Food Chemistry</i> , 25: 297-300.	77ROW	03	J. J. Rowe and E. Steinnes (1977) Instrumental Activation Analysis of Coal and Fly Ash with Thermal and Epithermal Neutrons, <i>Journal of Radioanalytical Chemistry</i> , 37: 849-856.
77NAD	01	R. A. Nadkarni and G. H. Morrison (1977) Neutron Activation Determination of Noble Metals using a Selective Group Separation Scheme, <i>Journal of Radioanalytical Chemistry</i> , 38: 435-449.	77ROW	04	J. J. Rowe and E. Steinnes (1977) Determination of 30 Elements in Coal and Fly Ash by Thermal and Epithermal Neutron Activation Analysis, <i>Talanta</i> , 24: 433
77NAD	02	R. A. Nadkarni (1977) Multielement Analysis of Biological Standards by Neutron Activation Analysis, <i>Radiochemical and Radioanalytical Letters</i> , 30: 329-340.	77SEG	01	C. Segebade (1977) Simultane Bestimmung von N, Mg, Si, P, und K in Pflanzenmaterial durch 14 MeV-Neutronenaktivierungs analyse <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 284: 23-29.

CODE N	REFERENCE
--------	-----------

- 77SHE 02 D. A. Shearer and R. O. Cloutier (1977)  
Chelate Extraction and Flame Atomic Absorption Spectrometric Determination of Nanogram Amounts of Manganese in Blood and Animal Tissue, *Journal of the Association of Official Analytical Chemists*, 60: 155-159.
- 77SHU 01 G. T. C. Shum, H. C. Freeman, and J. F. Uthe (1977)  
Flameless Atomic Absorption Spectrophotometry of Selenium in Fish and Food Products, *Journal of the Association of Official Analytical Chemists*, 60: 1010-1014.
- 77SIE 01 D. D. Siemer, R. K. Vitek, P. Kotek, and W. Houser (1977)  
Determination of Arsenic in Beverages and Foods by Hydride Generation Atomic Absorption Spectrometry, *Analytical Letters*, 10: 357-369.
- 77SMI 01 R. G. Smith, J. van Loon, J. Knechtel, J. Fraser, A. Pitts, and A. Hodges (1977), A Simple and Rapid Hydride Generation Atomic Absorption Method for the Determination of Arsenic in Biological, Environmental, and Geological Samples, *Analytica Chimica Acta*, 93: 61-67.
- 77SMI 04 J. Smits and R. van Grieken (1977)  
Optimization of a Simple Spotting Procedure for X-ray Fluorescence Analysis of Waters, *Analytica Chimica Acta*, 88: 97-107.
- 77SMI 05 F. Smith, A. McMurtrie, and H. Galbraith (1977)  
Ion Chromatographic Determination of Sulfur and Chlorine using Milligram and Submilligram Sample Weights, *Microchemical Journal*, 22: 45-49.
- 77SMY 01 W. R. Smythe (1977)  
Private Communication, University of Colorado; taken from 77RIN 01.
- 77STE 02 R. Stella, N. Genova, and M. di Casa (1977)  
Halogen Determination in Vegetable NBS Standard Reference Materials: Fluorine by Isotope Dilution; Chlorine, Bromine and Iodine by Neutron Activation Analysis, *Radiochemical and Radioanalytical Letters*, 30: 65-74.
- 77TAG 01 M. Taguchi, K. Yasuda, Y. Dokiya, and M. Shimizu (1977)  
Mercury Determination in Fish Samples by Flameless Atomic Absorption Spectrometry: Sampling and Wet Digestion, *Bunseki Kagaku*, 26: 438-441.
- 77TAM 01 K. H. Tam and H. B. S. Conacher (1977)  
The Suitability of the Dry Ashing Procedure for Determination of Arsenic in Marine Samples, *Journal of Environmental Science and Health*, B12: 213-227.
- 77TIL 01 J. H. Tillman (1977)  
A Combustimetric Method for Determining the Total Carbon Content of Geological Materials, *Journal of Research of the U.S. Geological Survey*, 5: 583-587.
- 77TJI 01 P. S. Tjioe, J. J. M. de Goeij, and J. P. W. Houtman (1977)  
Extended Automated Separation Techniques in Destructive Neutron Activation Analysis: Application to Various Biological Materials, Including Human Tissues and Blood, *Journal of Radioanalytical Chemistry*, 37: 511-522.
- 77TRO 01 G. Troll, A. Farzaneh, and K. Cammann (1977)  
Rapid Determination of Fluoride in Mineral and Rock Samples using an Ion Selective Electrode, *Chemical Geology*, 20: 295.
- 77TSU 01 K. Tsunoda, K. Fujiwara, and K. Fuwa (1977)  
Subnanogram Fluorine Determination by Aluminum Monofluoride Molecular Absorption Spectrometry, *Analytical Chemistry*, 49: 2035-2039.

CODE N	REFERENCE
77UCH 02	T. Uchida, I. Kojima, and C. Iida (1977) "One-drop Method" in Flame Atomic Absorption Spectrometry, <i>Bunseki Kagaku</i> , 26: T44-T47.
77VAN 01	C. Vandecasteele, R. Kieffer, and J. Hoste (1977) Activation Analysis with Cyclotron-Produced Fast Neutrons Application to Instrumental Multielement Analysis and to the Radiochemical Determination of Fluorine, <i>Journal of Radioanalytical Chemistry</i> , 37: 255-265.
77VOB 01	M. Vobeczký, L. Pavlik, and J. Benes (1977) Nondestructive Neutron Activation Assay of Submicrogram Quantities of Selenium, <i>Radiochemical and Radioanalytical Letters</i> , 29: 159-164.
77VOG 01	J. R. Vogt, editor (1977) Proceedings of the Third International Conference on Nuclear Methods in Environmental and Energy Research, Columbia, Missouri, CONF-771072.
77WAT 02	G. R. Waterbury (1977) Written Communication, Group CMB-1, Los Alamos Scientific Laboratory, Los Alamos, New Mexico.
77WIC 01	W. A. Wicks and R. W. Burke (1977) Determination of Beryllium by Fluorescence Spectrometry, in 77MAV 01, pp. 85-89.
77WIL 01	D. R. Williams and J. S. Hislop (1977) The Nondestructive Determination of Iodine in Soils and Biological Materials by High Energy Gamma-Photon Activation, <i>Journal of Radioanalytical Chemistry</i> , 39: 359-373.
77WIL 02	R. D. Willis and R. L. Walter (1977) Computer Analysis of Proton Induced X-ray Emission Spectra, <i>Nuclear Instruments and Methods</i> , 142: 231-242.
77WIL 03	R. D. Willis, R. Walter, R. Shaw, and W. Gutknecht (1977) Proton-Induced X-ray Emission Analysis of Thick and Thin Targets, <i>Nuclear Instruments and Methods</i> , 142: 67-77.
77YAN 01	Y. Yano, N. Odeka, S. Takei, and K. Nagashima (1977) Determination of Trace Heavy Metals in Environmental Samples with Special Reference to Lead in Plants, <i>Bunseki Kagaku</i> , 26: T25-T29.
77YAS 01	K. Yasuda, M. Taguchi, S. Tomura, and S. Toda (1977) Determination of Selenium in Biological Samples by Solvent Extraction-Graphite Furnace Atomic Absorption Spectrometry, <i>Bunseki Kagaku</i> , 26: 442-445.
77YAS 02	A. Yasui and C. Tsutsumi (1977) Adaptability of Wet Decomposition Method to Food Samples for the Determination of Arsenic by Arsine Generation-Atomic Absorption Spectrophotometry, <i>Bunseki Kagaku</i> , 26: 809-814.
77ZIK 01	I. Zikovsky and E. A. Schweikert (1977) Comparison of Nondestructive Proton and Neutron Activation: The Case of Biological Samples, <i>Journal of Radioanalytical Chemistry</i> , 37: 571-580.
78BALL 04	R. O. Allen and E. Steinnes (1978) Determination of Vanadium in Biological Materials by Radiochemical Neutron Activation Analysis, <i>Analytical Chemistry</i> , 50: 1553-1555.
78BEA 01	R. D. Beaty and M. M. Cooksey (1978) The Influence of Furnace Conditions on Matrix Effects in Graphite Furnace Atomic Absorption, <i>Atomic Absorption Newsletter</i> , 17: 53-58.

CODE N	REFERENCE	CODE N	REFERENCE
78BEH 01	O. Behne and H. Jurgensen (1978) Determination of Trace Elements in Human Blood Serum and in the Standard Reference Material "Bovine Liver" by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 42: 447-453.	78EGA 01	E. Egaas and K. Julshann (1978) A Method for the Determination of Selenium and Mercury in Fish Products using the Same Digestion Procedure, Atomic Absorption Newsletter, 17: 135-138.
78BER 01	C. Bergerioux and L. Zikovsky (1978) Instrumental Neutron Activation Analysis of Brewer's Yeast, Journal of Radioanalytical Chemistry, 47: 173-179.	78EPS 01	M. S. Epstein, T. C. Rains, T. J. Brady, J. R. Moore, and I. L. Barnes (1978), Determination of Several Trace Metals in Simulated Fresh Water by Graphite Furnace Atomic Emission Spectrometry, Analytical Chemistry, 50: 874-880.
78BER 02	C. Bergerioux and L. Zikovsky (1978) Determination of 18 Trace Elements in Petroleum and its Derivatives by Neutron Activation with a Small Nuclear Reactor, Journal of Radioanalytical Chemistry, 46: 277-284.	78EVA 01	W. H. Evans, J. I. Read, and B. E. Lucas (1978) Evaluation of a Method for the Determination of Total Cd, Pb, and Ni in Foodstuffs using Measurement by Flame Atomic Absorption Spectrophotometry, Analyst, 103: 580-591.
78BYR 01	A. R. Byrne and L. Kosta (1978) Determination of Vanadium in Biological Materials at Nanogram Level by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 44: 247-264.	78FLA 01	J. Flanjak (1978) Atomic Absorption Spectrometric Determination of Arsenic and Selenium in Offal and Fish by Hydride Generation, Journal of the Association of Official Analytical Chemists, 61: 1299.
78CAM 02	J. A. Campbell, J. Laul, K. Nielson, and R. Smith (1978) Separation and Chemical Characterization of Finely-sized Fly-ash Particles, Analytical Chemistry, 50: 1032-1040.	78FUD 01	N. Fudagawa and A. Kawase (1978) Determination of Nickel by Graphite Tube Furnace Atomic Absorption Spectrometry: Application to Nickel Determination in Plant Materials, Bunseki Kagaku, 27: 37-42.
78CAP 01	S. G. Capar, J. Tanner, M. Friedman, and K. Boyer (1978) Multielement Analysis of Animal Feed, Animal Wastes, and Sewage Sludge, Environmental Science and Technology, 12: 785-790.	78FUR 01	A. K. Furr, B. A. Roscoe, and T. F. Parkinson (1978) VAT-69: A Software System for Gamma Spectrometry, in 78CAR 03, pp. 352-366.
78CAR 01	M. B. Carvalho and D. M. Hercules (1978) Trace Arsenic Determination by Volatilization and X-ray Photoelectron Spectroscopy, Analytical Chemistry, 50: 2030.	78GAI 01	T. P. Gaines and G. A. Mitchell (1978) Sample Preparation by Column Elution for Elemental Analysis of Plant Tissue, Journal of the Association of Official Analytical Chemists, 61: 1179-1181.
78CAR 02	J. A. Carter, D. Donahue, J. Franklin, and R. Walker (1978) Trace Impurities in Coal and Fly Ash by Isotope Dilution Mass Spectrometry, in 78KAR 01, pp. 403-420.	78GAL 01	M. Gallorini, R. R. Greenberg, and T. E. Gills (1978) Simultaneous Determination of As, Sb, Cd, Cr, Cu, and Se in Environmental Materials by Radiochemical Neutron Activation Analysis, Analytical Chemistry, 50: 1479-1481.
78CAR 03	B. S. Carpenter, D. O'Agostino, and H. Yule, editors (1978) Computers in Activation Analysis and Gamma-ray Spectroscopy, Proceedings of the American Nuclear Society, Mayaguez, Puerto Rico, CONF-780421.	78GAN 01	S. Gangadharan and S. Yegnasubramanian (1978) Elemental Characterization through Instrumental Neutron Activation, Journal of Radioanalytical Chemistry, 42: 455.
78COO 01	K. A. Cook and E. R. Grahma (1978) Title Unknown, Soil Science Society of America Journal, 42: 57; taken from 80KOS 02.	78GEL 01	R. Geladi and F. Adams (1978) The Determination of Cadmium, Copper, Iron, Lead, and Zinc in Aerosols by Atomic Absorption Spectrometry, Analytica Chimica Acta, 96: 229-241.
78DAH 01	R. L. Oahlquist and J. W. Knoll (1978) Inductively Coupled Plasma Atomic Emission Spectrometry: Analysis of Biological Materials and Soils for Major, Trace, and Ultra-trace Elements, Applied Spectroscopy, 32: 1-29.	78GIL 01	T. E. Gills, M. Gallorini, and H. L. Rook (1978) The Determination of Trace Elements in New Food Grain SRM's using Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 46: 21-25.
78DAV 01	P. H. Davis, G. R. Oulude, R. M. Griffin, W. R. Matson, and E. W. Zink (1978), Determination of Total Arsenic at the Nanogram Level by High-speed Anodic Stripping Voltammetry, Analytical Chemistry, 50: 137-143.	78GLA 01	E. S. Gladney, W. K. Hensley, and M. M. Minor (1978) Comparison of Three Techniques for the Measurement of Depleted Uranium in Soils, Analytical Chemistry, 50: 652.
78DER 01	M. Dermelj, J. Novak, V. Ravnik, and L. Kosta (1978) Rapid Determination of Uranium at the Nanogram Level in Geological and Biological Materials, Journal of Radioanalytical Chemistry, 44: 271-277.	78GLA 02	E. S. Gladney (1978) Determination of Arsenic, Antimony, Molybdenum, Thorium, and Tungsten in Silicates by Thermal Neutron Activation and Inorganic Ion Exchange, Analytical Letters, A11: 429-435.
78DOG 01	S. Dogan and W. Haerdi (1978) Preconcentration on Silver Wool of Volatile Organo-mercury Compounds in Natural Waters and Air and the Determination of Mercury, International Journal of Environmental Analytical Chemistry, 5: 157.	78GLA 04	E. S. Gladney, D. B. Curtis, and E. T. Jurney (1978) Multielement Analysis of Major and Minor Elements by Thermal Neutron Induced Capture Gamma-ray Spectrometry, Journal of Radioanalytical Chemistry, 46: 299-308.
78EDI 01	R. O. Ediger, A. Knott, G. Peterson, and R. Beaty (1978) The Determination of Phosphorus by Atomic Absorption using the Graphite Furnace, Atomic Absorption Newsletter, 17: 28.		

CODE	N	REFERENCE	CODE	N	REFERENCE
78GOE	01	J. J. M. de Goeij, K. Volkers, P. Tjioe, and J. Kroon (1978) NBS SRM 1569 Brewer's Yeast: Is it an Adequate Standard Reference Material for Testing a Chromium Determination in Biological Materials?, Radiochemical and Radioanalytical Letters, 35: 139-146.	78KOB	01	K. Kobayashi and K. Kudo (1978) Determination of In, Cu, and Ni in Glassmaking Materials and NBS Standard Reference Materials by Substoichiometric Radioactivation Analysis, Journal of Radioanalytical Chemistry, 46: 265-276.
78GOE	03	J. J. M. de Goeij and C. Zegers (1978) Determination of Selenium in BCR Single Cell Protein via Destructive Neutron Activation Analysis, Interuniversitair Reactor Instituut report 133-78-11 (Delft).	78KOR	01	G. A. Korba and E. S. Yeung (1978) Application of Fabry-Perot Interferometry in Multielement Flame Emission Analysis, Analytica Chimica Acta, 99: 209-216
78GOR	01	D. T. Gordon (1978) Atomic Absorption Spectrometric and Colorimetric Determination of Iron in Seafoods, Journal of the Association of Official Analytical Chemists, 61: 715-719.	78KUB	01	H. Kubo, R. Bernthal, and T. R. Wildeman (1978) Energy Dispersive X-ray Fluorescence Spectrometric Determination of Trace Elements in Oil Samples, Analytical Chemistry, 50: 899-903.
78GRO	01	Z. Grobenski, M. Melcher, and B. Welz (1978) Richtigkeit bei der Bestimmung von Spurenelementen in Lebensmitteln mit der Graphitrohrtechnik AAS, Fresenius Zeitschrift fur Analytische Chemie, 290: 144-145.	78KUB	02	T. Kubota and T. Ueda (1978) Atomic Absorption Spectrophotometric Determination of Antimony with use of Borohydride Solution as Reductant, Bunseki Kagaku, 27: 692-696.
78GUI	01	R. J. Guidoboni (1978) Spark-source Mass Spectrometry and Atomic Absorption Spectrometry for the Determination of Trace Elements in Coal, in 78CAR 01, pp. 421-434.	78LAU	02	J. C. Laul, C. L. Wilkerson, and V. L. Crow (1978) Computer Methodology and its Applications to Geological and Environmental Matrices, in 78CAR 03, pp. 840-856.
78HAY	01	B. W. Haynes (1978) Electrothermal Atomic Absorption Determination of Arsenic and Antimony in Combustible Municipal Solid Waste, Atomic Absorption Newsletter, 17: 49-52.	78LIN	01	H. R. Linder, H. D. Seltner, and B. Schreiber (1978) Use of Dibenzylidithiocarbamate as Coprecipitant in the Routine Determination of 12 Heavy Metals in Pharmaceuticals by X-ray Fluorescence Spectroscopy, Analytical Chemistry, 50: 896-899.
78HIR	01	S. Hirai, S. Suzuki, and M. Okamoto (1978) Determination of Selenium in Biological Materials by Neutron Activation Analysis using Se-77m, Bunseki Kagaku, 27: 435.	78MAC	01	K. W. MacMurdo and W. W. Bowman (1978) Automated Absolute Activation Analysis with Californium-252 Sources, Report DP-1457, Savannah River Laboratory, E. I. DuPont de Nemours and Company.
78HIS	01	J. S. Hislop (1978) Gamma Activation Analysis: An Appraisal, Proceedings of the Analytical Division of the Chemical Society (London), 15: 193-205.	78MAS	01	K. Masumoto and N. Suzuki (1978) Selective Coincidence Spectrometry in the Nondestructive Determination of Nickel in Geological Materials with High Energy Photon Activation Analysis, Journal of Radioanalytical Chemistry, 46: 121-135.
78HUD	01	V. Hudnik, S. Gomiscek, and M. Ketic (1978) Title Unknown, Vestn. Slov. Kem. Durs., 25: 391; Taken from 80KOS 02.	78MAT	01	M. Matthes, R. Flucht, and M. Stoeppler (1978) Beitrage zur Automatisierten Spurenanalyse, Fresenius Zeitschrift fur Analytische Chemie, 291: 20-26.
78JAC	01	C. J. Jackson, D. Porter, A. Dennis, and P. Stockwell (1978) Automated Digestion and Extraction Apparatus for use in the Determination of Trace Metals in Foodstuffs, Analyst, 103: 317-331.	78MCC	01	L. T. McClendon (1978) Determination of Chromium in Biological Matrices by Neutron Activation: Application to Standard Reference Materials, Journal of Radioanalytical Chemistry, 42: 85-91.
78JOL	01	R. K. Jolly, J. Kane, D. Buckle, G. Randers-Pehrson, W. Teoh and H. Aceto (1978), A Target Chamber for PIXE Analysis using Micropipette Beams of 4 MeV Protons, Nuclear Instruments and Methods, 151: 183-188.	78MCG	01	J. R. McGinley, G. J. Stock, E. A. Schweikert, J. B. Cross, R. Zeisler, and L. Zikovsky (1978), Nuclear and Atomic Activation with Heavy Ion Beams, Journal of Radioanalytical Chemistry, 43: 559-573.
78KAR	01	C. Karr, editor (1978) Analytical Methods for Coal and Coal Products, Vol. 1, Academic Press, New York.	78MCK	01	D. M. McKown and J. S. Morris (1978) Rapid Measurement of Selenium in Biological Samples using Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 43: 411-420.
78KAT	01	K. Kato (1978) Unpublished Data; Quoted in 78MAS 01.	78MOR	01	A. E. Morgan and H. W. Werner (1978) Semi-quantitative Analyses by Secondary Ion Mass Spectrometry using One Fitting Parameter, Mikrochimica Acta (Wien), 1978 II: 31-50.
78KEL	02	M. T. Kelly, J. E. Riley, and G. Gleason (1978) NAALSQ: A Program for Neutron Activation Analysis with Least Squares Deconvolution of the Gamma Spectra on a Minicomputer in 78CAR 03, pp. 456-464.	78NAD	01	R. A. Nadkarni and G. H. Morrison (1978) Determination of Molybdenum by Neutron Activation and Srafion NMRR Ion Exchange Resin Separation, Analytical Chemistry, 50: 294-296.
78KNO	01	A. C. Knott, J. C. Mills, and C. B. Belcher (1978) Synthetic Calibration Standards for Optical Emission and X-ray Spectrometry, Canadian Journal of Spectroscopy, 23: 105-111.			

CODE N	REFERENCE	CODE N	REFERENCE
78NAD 02	R. A. Nadkarni and G. H. Morrison (1978) Use of Standard Reference Materials as Multielement Irradiation Standards in Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 43: 347-369.	78TER 01	S. Terashima (1978) Rapid Determination of Total Carbon and Sulfur in Geological Materials by Combustion and Infrared Absorption Photometry, Analytica Chimica Acta, 101: 25-31.
78NAK 01	R. Nakashima (1978) UHF-Plasma Torch Emission Spectrometry for Cadmium, Lead, and Zinc by Vaporization Introduction, Bunseki Kagaku, 27: 199-203.	78TSU 01	K. Tsunoda, K. Fujiwara, and K. Fuwa (1978) Determination of Chlorine and Bromine by Molecular Absorption of Aluminium Monohalides at High Temperature, Analytical Chemistry, 50: 861-865.
78PEL 01	P. A. Pella, K. E. Lorber, and K. F. J. Heinrich (1978) Energy-Dispersive X-ray Spectrometric Analysis of Environmental Samples after Borate Fusion, Analytical Chemistry, 50: 1268-1271.	78UEM 01	Y. J. Uemura, Y. Kuno, H. Koyama, and T. Yamazaki (1978) A New Way of Determining Concentrations in PIXE Trace Element Analysis, Nuclear Instruments and Methods, 153: 573-579.
78PIE 01	Z. Pietrzak-Fils, G. L. Rehnberg, M. J. Favor, D. F. Cahill and J. W. Laskey (1978), Chronic Ingestion of Cadmium and/or Tritium in Rats: I. Accumulation and Distribution of Cadmium in Two Generations, Environmental Research, 16: 9-17.	78URE 01	A. M. Ure and J. R. Bacon (1978) Scandium, Yttrium, and Rare Earth Content of Water Lily, Geochimica et Cosmochimica Acta, 42: 651-652.
78RIT 01	C. Ritter, S. Bergman, C. Cothorn, and E. Zamierowski (1978) Comparison of Sample Preparation Techniques for Atomic Absorption Analysis of Sewage Sludge and Soil, Atomic Absorption Newsletter, 17: 70-72.	78URE 02	A. M. Ure, M. P. Hernandez-Artiga, and M. C. Mitchell (1978) A Carbon-rod Atomizer for the Determination of Cadmium and Lead in Plant Materials and Soil Extracts, Analytica Chimica Acta, 96: 37-43.
78RYA 01	D. E. Ryan, D. C. Stuart, and A. Chattopehdhyay (1978) Rapid Multielement Neutron Activation Analysis with a SLOWPOKE Reactor, Analytica Chimica Acta, 100: 87-93.	78VAL 01	I. Valente, M. J. Minski, and H. J. M. Bowen (1978) Rapid Determination of Sb in Biological and Environmental Samples using Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 45: 417-421.
78SIE 01	D. D. Siemer and H. Wei (1978) Determination of Lead in Rocks and Glasses by Temperature Controlled Graphite Cup Atomic Absorption Spectrometry, Analytical Chemistry, 50: 147-151.	78VIS 01	R. D. Vis, K. J. Wiederspahn, and H. Verheul (1978) The Determination of the Elemental Composition of Glasses for Forensic Application using a Combination of Proton Induced X-ray Emission and Inelastic Proton Scattering, Journal of Radioanalytical Chemistry, 45: 407-416.
78SIM 01	P. C. Sims (1978) Preprint, Purdue University Accelerator Laboratory; taken from 78NAD 02.	78WAN 01	L. E. Wengen and E. S. Gladney (1978) Determination of Arsenic and Gallium in Standard Materials by Instrumental Epithermal Neutron Activation Analysis, Analytica Chimica Acta, 96: 271-277.
78SMI 01	R. G. Smith (1978) Sources of Copper and Cadmium Contamination in Small Biological Samples, Talanta, 25: 173-175.	78WEA 01	J. N. Weaver (1978) Neutron Activation Analysis of Trace Elements in Coal, Fly Ash, and Fuel Oils, in 78KAR 01, pp. 377-401.
78STA 02	P. Standeneks, A. Rindby, and E. Selin (1978) Development of Low Power Monoenergetic X-ray Tube for Trace Element Analysis, Nuclear Instruments and Methods, 153: 269.	78WEE 01	C. A. Weers, K. Hoede, and H. A. Das (1978) Application of Selective Evaporation in the Determination of As and Br in Dry Biological Material by Thermal Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 42: 113-119.
78SUD 01	R. F. Suddendorf and K. W. Boyer (1978) Nebulizer for Analysis of High Salt Content Samples with Inductively Coupled Plasma Emission Spectrometry, Analytical Chemistry, 50: 1769-1771.	78WEG 01	W. Wegscheider, K. E. Lorber, and K. Muller (1978) Quantitative Intermethod Comparison of Energy Dispersive X-ray Fluorescence and Atomic Absorption Spectrometry for the Analysis of Urban Dusts and Fly Ash, International Journal of Environmental Analytical Chemistry, 5: 171-187.
78SUG 01	A. Sugimae and R. K. Skogerboe (1978) Dual Approach to the Emission Spectrographic Determination of Elements in Airborne Particulate Matter, Analytica Chimica Acta, 97: 1-11.	78WEL 01	B. Welz and M. Melcher (1978) Bestimmung von Arsen und Selen in Korperflussigkeiten und Geweben mit der Hydrid-methode, Fresenius Zeitschrift fur Analytische Chemie, 290: 106-107.
78SUG 02	A. Sugimae (1978) Determination of Trace Amounts of Rare Earth Elements in Various Environmental Samples by Spark Source Mass Spectrography, Bunseki Kagaku, 27: 169-174.	79ABE 01	F. W. Abercrombie, M. D. Silvester, and R. B. Cruz (1979) Simultaneous Multielement Analysis of Biologically Related Samples with RF-ICP, in 79RIS 01, pp. 10-25.
78SZY 01	F. J. Szydlowski (1978) Use of Branch Capillary for Ionization Buffer Addition in Flame Atomic Absorption Spectrometric Determination of Sodium and Potassium in Food Products, Atomic Absorption Newsletter, 17: 65-69.	79ABO 01	M. D. K. Abo-Rady (1979) Schwermetallbestimmung in zwei Biologischen und zwei Geologischen Standards mit Hilfe der Atom-Absorptions-Spektroskopie, Fresenius Zeitschrift fur Analytische Chemie, 296: 380-382.
78TAK 01	T. Takamatsu (1978) Multielement Analysis of Rock and Sediment Samples by Nondispersive X-ray Fluorescence, Bunseki Kagaku, 27: 193-198.		

- | CODE N   | REFERENCE   |
|----------|---|
| 79ABU 01 | J. Abukawa, M. Higuchi, K. Sato, and S. Bando (1979)<br>A Comparison of Various Methods for Determination of Cobalt<br>in Marine Biological Materials, <i>Bunseki Kagaku</i> , 28: 506-508.   |
| 79AHM 01 | S. Ahmed, M. S. Chaudhry, and I. H. Qureshi (1979)<br>Determination of Toxic Elements in Tobacco Products by<br>Instrumental Neutron Activation Analysis, <i>Journal of<br/>Radioanalytical Chemistry</i> , 54: 331-341.                      |
| 79AND 01 | D. L. Anderson, M. Failey, W. Zoller, and G. Gordon (1979)<br>Neutron Capture Prompt Gamma-ray Activation Analysis:<br>Multielement Measurements on Various Materials, in 79CHR 01,<br>pp. 546-548.   |
| 79BAR 03 | R. M. Barnes, editor (1979)<br>Applications of Plasma Emission Spectrochemistry, Heyden,<br>Philadelphia.   |
| 79BEN 01 | G. E. Bentley, L. Markowitz, and R. Meglen (1979)<br>Analysis of Molybdenum in Biological Materials, in 79RIS 01,<br>pp. 35-39.   |
| 79BLO 01 | A. J. Blotcky, C. Falcone, V. A. Medina, E. P. Rack, and<br>D. W. Hobson (1979), Determination of Trace Level Vanadium<br>in Marine Biological Samples by Chemical Neutron Activation<br>Analysis, <i>Analytical Chemistry</i> , 51: 178-182. |
| 79B0G 01 | S. Bogdanski, I. Shakir, W. Stephen, and A. Townshend (1979)<br>Determination of Trace Amounts of Sulphate by Molecular<br>Emission Cavity Analysis using a Vaporization System,<br><i>Analyst</i> , 104: 886-890.                            |
| 79BRA 01 | F. P. Brauer and R. S. Strebin (1979)<br>Title Unknown, in Nuclear Activation Techniques in the Life<br>Sciences, IAEA, Vienna, p. 27; Taken from 80GVA 01.   |
| 79BRE 01 | J. J. la Brecque (1979)<br>Interferences in the Determination of Titanium in Silicate<br>Rocks and Venezuelan Laterites by Atomic Absorption<br>Spectroscopy, <i>Applied Spectroscopy</i> , 33: 389-393.                                      |
| 79BRE 02 | J. J. la Brecque (1979)<br>Decomposition and Determination of Aluminium and Silicon in<br>Venezuelan Laterites by Atomic Absorption Spectroscopy,<br><i>Chemical Geology</i> , 26: 321-329.   |
| 79BRI 02 | C. Brihaye (1979)<br>Analyse de Traces par la Methode Electrochimique Utilisant<br>une Electrode Disque-Anneau, Doctoral Thesis, University of<br>Liege, Belgium (1979-1980).   |
| 79BYR 01 | A. R. Byrne (1979)<br>Extraction of Some Trace Elements as Iodides with<br>Methylisobutyl Ketone and its Applications in Neutron<br>Activation Analysis, <i>Radiochemical and Radioanalytical<br/>Letters</i> , 40: 1-16.                     |
| 79CAH 01 | R. A. Cahill (1979)<br>Private Communication, Illinois State Geological Survey.   |
| 79CHA 02 | A. Chatopadhyay, K. M. Ellis, and K. N. de Silva (1979)<br>Title Unknown, in Nuclear Activation Techniques in the Life<br>Sciences, IAEA, Vienna, pp. 667-682; Taken from 79IAE 01.   |
| 79CHA 04 | A. Chatopadhyay and K. N. de Silva (1979)<br>Pseudo-Cyclic Neutron Activation Analysis of Ag, F, Rb, Sc,<br>and Se in Biological Samples, <i>Transactions of the American<br/>Nuclear Society</i> , 32: 185-186.                              |

- | CODE N   | REFERENCE  |
|----------|--|
| 79CHR 01 | R. E. Chrien and W. R. Kane, editors (1979)<br>Neutron Capture Gamma-ray Spectroscopy, Plenum Press,<br>New York.  |
| 79C00 01 | M. Cooksey and W. B. Barnett (1979)<br>Sequential Multielement Atomic Absorption Analysis of<br>Agricultural Samples, <i>Atomic Absorption Newsletter</i> , 18: 1-4.   |
| 79COR 01 | R. Cornelis, L. Mees, J. Hoste, J. Ryckenbusch, J. Versieck,<br>and F. Barbier (1979), Title Unknown, in Nuclear Techniques<br>in the Life Sciences 1978, IAEA, Vienna, p. 165; Taken from<br>80HEY 01.  |
| 79CRO 01 | J. D. Cross and H. Smith (1979)<br>The Determination of Bromine in Biological Material by<br>Thermal Neutron Activation Analysis, <i>Journal of<br/>Radioanalytical Chemistry</i> , 48: 191-196.   |
| 79DAB 01 | R. W. Dabeka, A. D. McKenzie, and H. Conacher (1979)<br>Microdiffusion and Fluoride Specific Electrode Determination<br>of Fluoride in Foods, <i>Journal of the Association of Official<br/>Analytical Chemists</i> , 62: 1065-1068.   |
| 79DAB 02 | R. W. Dabeka (1979)<br>Graphite Furnace Atomic Absorption Spectrometric<br>Determination of Lead and Cadmium in Foods after Solvent<br>Extraction and Stripping, <i>Analytical Chemistry</i> , 51: 902-907.  |
| 79DAL 01 | L. S. Dale (1979)<br>The Emission Spectrographic Determination of Boron in<br>Silicate Materials, <i>Applied Spectroscopy</i> , 33: 404-406.   |
| 79DAS 01 | H. A. Das, A. Faanhof, and H. A. van der Sloot (1979)<br>Errors in Instrumental Neutron Activation Analysis:<br>I. Determination of the Peak Area, <i>Journal of<br/>Radioanalytical Chemistry</i> , 54: 289-301.  |
| 79DER 01 | M. Dermelj, A. Vakselj, V. Ravnik, and B. Smidovis (1979)<br>Applicability of Carbamate Extraction to Radiochemical<br>Separation and Determination of Cd, Co, Cu, and Zn in<br>Various Biosphere Samples, <i>Radiochemical and Radioanalytical<br/>Letters</i> , 41: 149-160.   |
| 79DES 01 | H. B. Desai, R. K. Iyer, and S. R. Kayastha (1979)<br>Precipitation of Mercury as Zinc Mercurio-thiocyanate,<br>Application to Activation Analysis, <i>Radiochemical and<br/>Radioanalytical Letters</i> , 41: 299-306.  |
| 79EDI 01 | R. D. Ediger and D. L. Wilson (1979)<br>The Performance of an Inductively Coupled Plasma on the<br>Model 5000 Atomic Absorption Spectrophotometer, <i>Atomic<br/>Absorption Newsletter</i> , 18: 41-45.  |
| 79EPS 01 | M. Epstein, S. Nikdel, N. Omenetto, R. Reeves, J. Bradshaw,<br>and J. Winefordner (1979), Inductively Coupled Argon Plasma<br>as an Excitation Source for Flame Atomic Fluorescence<br>Spectrometry, <i>Analytical Chemistry</i> , 51: 2071-2077.  |
| 79EPS 03 | M. S. Epstein and A. T. Zander (1979)<br>Direct Determination of Barium in Sea and Estuarine Water by<br>Graphite Furnace Atomic Spectrometry, <i>Analytical Chemistry</i> ,<br>51: 915-918.   |
| 79EVA 01 | W. H. Evans, F. J. Jackson, and D. Dellar (1979)<br>Evaluation of a Method for Determination of Total Antimony,<br>Arsenic, and Tin in Foodstuffs using Measurement by Atomic<br>Absorption Spectrophotometry with Atomization in a Silica<br>Tube using the Hydride Generation Technique, <i>Analyst</i> ,<br>104: 16-30. |

CODE N	REFERENCE	CODE N	REFERENCE
79FAA 01	A. Faenhoef and H. A. Das (1979) Analysis of Tobacco by Instrumental Epithermal Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 41: 367-374.	79HEI 03	H. Heinrichs (1979) Determination of Lead in Geological and Biological Materials by Graphite Furnace Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 295: 355-361.
79FAI 01	M. P. Failey, D. Anderson, W. Zoller, G. Gordon, and R. Lindstrom (1979), Neutron-capture Prompt Gamma-ray Activation Analysis for Multielement Determination in Complex Samples, Analytical Chemistry, 51: 2209-2221.	79HEI 04	J. Heinonen (1979) Assurance and Control of Quality in Trace Element Analysis, in 79IAE 01, pp. 7-25.
79FEL 01	C. Feldman (1979) Improvements in the Arsine Accumulation-Helium Glow Detector Procedure for Determining Traces of Arsenic, Analytical Chemistry, 51: 664-669.	79HER 01	J. L. Hern (1979) Elemental Analysis in Agriculture using Inductively Coupled Plasma Atomic Emission Spectroscopy, in 79BAR 03.
79FLA 02	J. Flanjak and H. Y. Lee (1979) Trace Metal Content of Livers and Kidneys of Cattle, Journal of Agricultural Science and Food Chemistry, 30: 503-507.	79HIL 01	E. P. Hilliard and J. D. Smith (1979) Minimum Sample Preparation for the Determination of Ten Elements in Pig Faeces and Feeds by Atomic Absorption Spectrophotometry and A Spectrophotometric Procedure for Total Phosphorus, Analyst, 104: 313-322.
79FRE 01	G. Frechette, J. Hebert, T. Thinh, R. Rousseau, and F. Claisse (1979), X-ray Fluorescence Analysis of Cements, Analytical Chemistry, 51: 957-961.	79HOE 01	O. Hoede and H. A. van der Sloot (1979) Application of Hydride Generation for the Determination of Antimony and Arsenic in Biological Material by Neutron Activation Analysis, Analytica Chimica Acta, 111: 321-325.
79FRU 01	J. S. Fruchter and M. R. Petersen (1979) Environmental Characterization of Products and Effluents from Coal Conversion Processes, in 79KAR 01, pp. 247-275.	79HOE 02	M. Hoenig, P. van Hoeywegen, and J. Liboton (1979) Evaluation a l'aide d'etalons Internationaux de Deux Methodes de Mineralisation des Vegetaux, Analusis, 7: 104.
79GEL 01	P. Geladi and F. Adams (1979) The Determination of Beryllium and Manganese in Aerosols by Atomic Absorption Spectrometry with Electrothermal Atomization, Analytica Chimica Acta, 105: 219-231.	79IAE 01	International Atomic Energy Agency (1979) Proceedings of an International Symposium on Nuclear Activation Techniques in the Life Sciences held by the IAEA in Vienna, May 1978, STI/PUB/492, ISBN 92-0-010079-1.
79GIA 01	R. D. Giauque, R. B. Garrett, and L. Y. Goda (1979) Determination of Trace Elements in Light Element Matrices by X-ray Fluorescence Spectrometry with Incoherent Scattered Radiation as an Internal Standard, Analytical Chemistry, 51: 511-516.	79IMA 01	A. Imahori, I. Fukushima, S. Shiobara, Y. Yanagida, and K. Tomura (1979), Multielement Neutron Activation Analysis of Human Scalp Hair: A Local Population Survey in the Tokyo Metropolitan Area, Journal of Radioanalytical Chemistry, 52: 167-180.
79GIA 03	R. D. Giauque (1979) Private Communication, Lawrence Berkeley Laboratory.	79IMA 03	A. Imahori, I. Fukushima, S. Shiobara, K. Tomura, M. Suzuki, M. Yukawa, and M. Terai (1979), A Study of Trace Element Concentrations in Human Hair of Some Local Populations in Japan, in 79IAE 01, pp. 563-571.
79GLA 02	E. S. Gladney and D. R. Perrin (1979) Determination of Bromine in Biological, Soil, and Geological Standard Reference Materials by Instrumental Epithermal Neutron Activation, Analytical Chemistry, 51: 2015-2018.	79INU 01	T. Inui, N. Fudagawa, and A. Kawase (1979) Extraction and Atomic Absorption Spectrometric Determination of Bismuth with Electrothermal Atomization, Fresenius Zeitschrift fur Analytische Chemie, 299: 190-193.
79GLA 03	E. S. Gladney and D. R. Perrin (1979) Quantitative Analysis of Silicates by Instrumental Epithermal Neutron Activation using (n,p) Reactions, Analytical Chemistry, 51: 2297-2300.	79JER 01	R. E. Jervis and B. Tieffenbach (1979) Arsenic Accumulation in People Working With and Living Near a Gold Smelter, in 79IAE 01, pp. 627-642.
79GLA 04	E. S. Gladney, O. B. Curtis, and E. T. Jurney (1979) Simultaneous Determination of Nitrogen, Carbon, and Hydrogen by Thermal Neutron Prompt Gamma-ray Spectrometry, Analytica Chimica Acta, 110: 339-343.	79JON 01	J. D. Jones, P. B. Kaufman, and W. L. Rigot (1979) Method for Determination of Silicon in Plant Materials by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 50: 261-275.
79GOD 01	W. C. Godbeer and D. J. Swaine (1979) Cadmium in Coal and Fly Ash, in Trace Substances in Environmental Health-XIII, D. D. Hemphill (editor), University of Missouri, Columbia.	79KAN 02	Y. Kanda and N. Suzuki (1979) Redox Substoichiometric Determination of Arsenic in Biological Materials by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 54: 7-14.
79GRE 01	R. R. Greenberg (1979) Trace Element Characterization of the NBS Urban Particulate Matter Standard Reference Material by Instrumental Neutron Activation Analysis, Analytical Chemistry, 51: 2004-2006.	79KAR 01	C. Karr (1979) Analytical Method for Coal and Coal Products, Academic Press New York, Vol. III.
79HEC 01	M. H. Heckman (1979) Analysis of Foods for Iodine: Interlaboratory Study, Journal of the Association of Official Analytical Chemists, 62: 1045	79KNE 01	J. R. Knechtel and J. L. Fraser (1979) Wet Digestion Method for the Determination of Mercury in Biological and Environmental Samples, Analytical Chemistry, 51: 315-317.

CODE N	REFERENCE	CODE N	REFERENCE
79KOB 01	K. Kobayashi and K. Kudo (1979) Rapid Determination of In, Ni, and Cu in NBS Standard Reference Material by Substoichiometric Radioactivation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 54: 49-58.	79MCQ 02	N. R. McQuaker, D. F. Brown, and P. O. Kluckner (1979) Digestion of Environmental Materials for Analysis by Inductively Coupled Plasma Atomic Emission Spectrometry, <i>Analytical Chemistry</i> , 51: 1082-1084.
79KOB 03	K. Kobayashi and K. Kudo (1979) Determination of Multielement in Optical Waveguide and Standard Reference Materials by Instrumental Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 53: 233-246.	79MEN 01	E. Mendelovici, J. J. LaBrecque, and R. E. Villalba (1979) Calcium and Magnesium Determination in Silicates and Venezuelan Laterites by Atomic Absorption Spectroscopy: Interference Studies in the Fluoboric - Boric Acid Matrix, <i>Chemical Geology</i> , 24: 199-209.
79KRA 01	J. A. Krasowski and T. R. Copeland (1979) Matrix Interferences in Furnace Atomic Absorption Spectrometry, <i>Analytical Chemistry</i> , 51: 1843-1849.	79MER 01	R. N. Merryfield and R. C. Loyd (1979) Simultaneous Determination of Metals in Oil by Inductively Coupled Plasma Emission Spectrometry, <i>Analytical Chemistry</i> , 51: 1965-1968.
79KUC 01	J. Kucera (1979) Epithermal Neutron Activation Analysis of Trace Elements in Biological Materials, <i>Radiochemical and Radioanalytical Letters</i> , 38: 229-246.	79MIL 01	R. J. Miller and D. J. Ingle (1979) Unpublished Data; Taken from 81MAR 01.
79KUE 01	E. C. Kuehner and P. A. Pella (1979) Energy-Dispersive X-ray Spectrometric Analysis of NBS Standard Reference Material 1571 Orchard Leaves after Oxidation and Borate Fusion, <i>Applied Spectroscopy</i> , 33: 632.	79MIZ 01	A. Mizuike and A. Iino (1979) Coating of Borosilicate Glass Containers for Preventing Contamination in Trace Element Analysis, <i>Analytica Chimica Acta</i> , 111: 251-256.
79LAK 01	E. L. Lakomek and P. Eklund (1979) Trace Element Analysis of Human Cataractous Lenses by Neutron Activation Analysis and Atomic Absorption Spectrometry, in 79IAE 01, pp. 333-343.	79MON 01	J. R. Montgomery and M. T. Price (1979) Release of Trace Metals by Sewage Sludge and the Subsequent Uptake by Members of a Turtle Grass Mangrove Ecosystem, <i>Environmental Science and Technology</i> , 13: 546-549.
79LIK 01	W. Likusser (1979) Untersuchungen über das Morphin-W-dithio-carbonsäure Morphinium (MDCM) als Reagens in der Quantitativen Analytik, <i>Mikrochimica Acta (Wien)</i> , 1979II: 43-52.	79NAR 01	H. Harasaki (1979) Determination of Cadmium in Polished Rice by Low-temperature Ashing and Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 104: 393-395.
79LOC 01	J. Locke (1979) The Determination of Eight Elements in Human Liver Tissue by Flame Atomic Absorption Spectrometry in Sulphuric Acid Solution, <i>Analytica Chimica Acta</i> , 104: 225-231.	79NIC 01	L. W. Nicholson and K. Rengen (1979) Determination of Arsenic in Some Lake Michigan Fish using Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 54: 355-360.
79LPI 01	Lunar and Planetary Institute (1979) Proceedings of the Tenth Lunar and Planetary Science Conference, Houston, Texas; <i>Geochimica et Cosmochimica Acta Supplement</i> 11.	79ORV 01	E. Orvini and R. Delfanti (1979) Determination of Arsenic at Nanogram Level in Biological Tissues by Radiochemical Activation Analysis, <i>Radiochemical and Radioanalytical Letters</i> , 37: 199-206.
79MAN 01	N. F. Mangelson, M. Hill, K. Neilson, D. Eatough, R. Izatt, J. Christensen, and D. Richards (1979), Proton Induced X-ray Emission Analysis of Pima Indian Autopsy Tissues, <i>Analytical Chemistry</i> , 51: 1187-1194.	79PAV 02	L. Pavlik, J. Kalouskova, M. Vobecky, J. Dedina, J. Benes, and J. Parizek (1979), Selenium Levels in the Kidneys of Male and Female Rats, in 79IAE 01, pp. 213-223.
79MAT 01	K. Matsumoto and K. Fuwa (1979) Major and Trace Element Determination in Geological and Biological Samples by Energy-Dispersive X-ray Fluorescence Spectrometry, <i>Analytical Chemistry</i> , 51: 2355-2358.	79PEA 01	S. Peats (1979) Determination of Arsenic in Seaweed and Related Products by Atomic Absorption Spectrophotometry using the MHS-10 Hydride Generation System, <i>Atomic Absorption Newsletter</i> , 18: 118-120.
79MAT 02	T. D. Mathews, J. Boyne, R. Davis, and D. Simmons (1979) The Distribution of Copper and Iron in South Carolina Oysters, <i>Journal of Environmental Science and Health</i> , A14: 683-694.	79PET 01	P. Peterson, C. Girling, D. Klumpp, and M. Minski (1979) Title Unknown, in <i>Nuclear Activation Techniques in the Life Sciences</i> , IAEA, Vienna, p. 103; Taken from 80KOS 02.
79MAY 01	S. May and D. Piccot (1979) Dosages de Traces D'Elements Toxiques (As, Cd, Hg, Sb, Se) dans les Protéines Synthétiques, par Radioactivation Neutronique, <i>Analisis</i> , 7: 133-137.	79PLA 01	L.-O. Plantin (1979) Trace Elements in Cardiovascular Diseases, in 79IAE 01, pp. 321-330.
79MCQ 01	N. R. McQuaker, P. D. Kluckner, and G. N. Chang (1979) Calibration of an Inductively Coupled Plasma Atomic Emission Spectrometer for the Analysis of Environmental Materials, <i>Analytical Chemistry</i> , 51: 888-895.	79PRA 01	J. W. Prether, J. A. Guin, and A. R. Tarrer (1979) X-ray Fluorescence Analysis of Trace Elements in Coal and Solvent Refined Coal, in 79KAR 01, pp. 357-369.
		79RAI 01	R. M. Raie and H. Smith (1979) The Determination of Selenium in Biological Materials by Thermal Neutron Activation Analysis and Atomic Absorption Spectrometry, <i>Journal of Radioanalytical Chemistry</i> , 48: 185-190.

CODE N	REFERENCE	CODE N	REFERENCE
79REE 01	J. Reednick (1979) A Unique Approach to Atomic Spectroscopy: High Energy Plasma Excitation and High Resolution Spectrometry, American Laboratory, 11: 53-62.	79STD 01	M. Stoeppeler, P. Valenta, and H. W. Nurnberg (1979) Application of Independent Methods and Standard Materials: An Effective Approach to Reliable Trace and Ultratrace Analysis of Metals and Metalloids in Environmental and Biological Matrices, Fresenius Zeitschrift fur Analytische Chemie, 297: 22-34.
79REI 01	J. E. D'Reilly and D. G. Hicks (1979) Slurry-Injection Atomic Absorption Spectrometry for Analysis of Whole Coal, Analytical Chemistry, 51: 1905-1915.	79SZY 01	F. J. Szydlowski (1979) Boron in Natural Waters by Atomic Absorption Spectrometry with Electrothermal Atomization, Analytica Chimica Acta, 106: 121-125.
79REN 01	K. Rengan, J. P. Haushalter, and J. D. Jones (1979) Simultaneous Determination of Arsenic and Antimony in Environmental Samples by Radiochemical Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 54: 347-353.	79SZY 02	F. J. Szydlowski and D. L. Dummine (1979) Semi-automatic Digestion and Automatic Analysis for Selenium in Animal Feeds, Analytica Chimica Acta, 105: 445-449.
79REN 02	M. J. Renan (1979) The Determination of Elements Not Previously Certified in International Biological Reference Materials, Radiochemical and Radioanalytical Letters, 40: 87-102.	79TAG 01	M. Taguchi, K. Yasuda, M. Hashimoto, and S. Toda (1979) Some Improvements for Mercury Determination in Marine Organisms by Atomic Absorption Spectrometry, Bunseki Kagaku, 28: T33-T38.
79REN 03	M. J. Renan, B. Drennan, R. Keddy, and J. Sellschop (1979) Oesophageal Cancer in the Transkei: Determination of Trace Element Concentrations in Selected Plant Material by INAA, in 79IAE 01, pp. 479-494.	79TAM 01	Y. Tamari, K. Hiraki, and Y. Nishikawa (1979) Fluorometric Determination of Selenium in Sediments with 2,3-Diaminonaphthalene, Bunseki Kagaku, 28: 164-169.
79RIS 01	T. H. Risby, editor (1979) Ultratrace Metal Analysis in Biological Sciences and Environment, Advances in Chemistry Series, American Chemical Society, Washington, D. C.	79TJL 01	P. Tjioe, J. de Goeij, and K. Volkers (1979) A Routine Chromium Determination in Biological Materials: Application to Various Reference Materials and Standard Reference Materials, Interuniversitair Reactor Instituut report 133-79-02 (Delft).
79RDB 01	W. B. Robbins, J. A. Caruso, and F. L. Fricke (1979) Determination of Ge, As, Se, Sn, and Sb in Complex Samples by Hydride Generation - Microwave-induced Plasma Atomic Emission Spectrometry, Analyst, 104: 34-40.	79ULL 01	A. H. Ullman, B. Pollard, G. Boutillier, R. Batch, P. Hanley and J. Winefordner (1979), Computer-Controlled Multielement Atomic Emission/Fluorescence Spectrometer System, Analytical Chemistry, 51: 2382-2387.
79ROS 02	R. J. Rosenberg (1979) Radiochemical Activation Analysis of Arsenic, Selenium, and Antimony in Biological Samples, Journal of Radioanalytical Chemistry, 50: 109-114.	79UNR 01	D. M. Unruh, R. Hutchison, and M. Tatsumoto (1979) U-Th-Pb Age of the Barwell Condrite: Anatomy of a "Discordant" Meteorite, in 79LP1 01, pp. 1011-1030.
79ROS 03	G. Rossi and A. Colombo (1979) Reference Materials for Chemical Analysis: Highlights on the Activity of JRC-ISPRRA Laboratories, Fresenius Zeitschrift fur Analytische Chemie, 297: 13-17.	79VEI 01	C. Veillon, W. R. Wolf, and B. E. Guthrie (1979) Determination of Chromium in Biological Materials by Stable Isotope Dilution, Analytical Chemistry, 51: 1022-1024.
79SAT 01	T. Sato and T. Kato (1979) Determination of Trace Elements in Various Organs of Rats by Thermal Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 53: 181-190.	79VER 01	J. Versieck, J. Hoste, J. de Rudder, F. Barbier, and L. Vanballenberghe (1979), Determination of Chromium in Bowen's Kale, NBS Bovine Liver, and Brewers Yeast, Before and After Dry Ashing, Analytical Letters, 12: 555-562.
79SCH 02	H. Schorin (1979) Quantitative Determination of Si, Al, Ti, and Fe in Laterite and Bauxites by X-ray Fluorescence using a Computer for Correction of Interelement Effects, Applied Spectroscopy, 33: 634-637.	79VIJ 01	P. N. Vijan (1979) Determination of Antimony in Environmental Samples by AA, American Laboratory, 11: 32-43.
79SIL 01	D. Silberman and G. L. Fisher (1979) Room-Temperature Dissolution of Coal Fly Ash for Trace Metal Analysis by Atomic Absorption, Analytica Chimica Acta, 106: 299-307.	79VOB 01	M. Vobecky, J. Dedina, L. Pavlik, and J. Valasek (1979) Gamma-ray Interferences in the Determination of Selenium by the INAA Method, Radiochemical and Radioanalytical Letters, 38: 197-204.
79SMI 01	R. D. Smith, J. A. Campbell, and K. K. Nielson (1979) Concentration Dependence upon Particle Size of Volatilized Elements in Fly Ash, Environmental Science and Technology, 13: 553-560.	79WAR 01	N. I. Ward, R. Stephens, and D. E. Ryan (1979) Comparison of Three Analytical Methods for the Determination of Trace Elements in Whole Blood, Analytica Chimica Acta, 110: 9-19.
79STE 01	E. Steinnes (1979) Instrumental Activation Analysis of Coal and Coal Ash with Thermal and Epithermal Neutrons, in 79KAR 01, pp. 279-302.	79WAR 02	N. I. Ward and D. E. Ryan (1979) Multielement Analysis of Blood for Trace Metals by Neutron Activation Analysis, Analytica Chimica Acta, 105: 185-197.
		79WAT 02	J. H. Watkinson (1979) Semi-automated Fluorometric Determination of Nanogram Quantities of Selenium in Biological Material, Analytica Chimica Acta, 105: 319-325.

CODE N	REFERENCE	CODE N	REFERENCE
79WEG 01	W. Wegscheider, G. Knapp, and H. Spitz (1979) Sequential Testing as an Efficient Screening Method for Interferences in Routine Analysis as Applied to Atomic Absorption Spectrometry with Flame and Graphite Furnace Atomization, <i>Talanta</i> , 26: 25-31.	80BER 02	C. Bergeroux and W. Haerdi (1980) Coprecipitation of Dissolved Trace Elements with Combined Organic Precipitating Reagents for use in X-ray Fluorescence Analysis: I. 1,10-Phenanthroline and Tetraphenyl Boron, <i>Analisis</i> , 8: 169-173.
79WES 01	M. H. West, J. F. Molina, C. L. Yuan, and D. G. Davis (1979) Determination of Metals in Waters and Organic Materials by Flameless Atomic Absorption Spectrometry with a Wire Loop Atomizer, <i>Analytical Chemistry</i> , 51: 2370-2375.	80BRA 01	P. Bratter and P. Schramel, editors (1980) Trace Element Analytical Chemistry in Medicine and Biology, Proceedings of the First International Workshop, Neuharberg, Federal Republic of Germany, W. de Gruyter, Berlin.
79YAN 01	M. H. Yang, C. L. Tseng, and G. Tolg (1979) Determination of Small Amounts of Boron by Radiation Decomposition of Chloroacetic Acid Solution, <i>Talanta</i> , 26: 705-711.	80BRE 01	I. Brenner, A. Watson, G. Russell, and M. Goncalves (1980) A New Approach to the Determination of the Major and Minor Constituents in Silicate and Phosphate Rocks, <i>Chemical Geology</i> , 28: 321-330.
79YAS 01	K. Yasuda, S. Toda, C. Igarashi, and S. Tamura (1979) Extraction System for Solvent Extraction-Graphite Furnace Atomic Absorption Spectrometry, <i>Analytical Chemistry</i> , 51: 161-163.	80BUA 01	P. Buat-Ménard, C. Lambert, M. Arnold, and R. Chesselet (1980), Multielement Neutron Activation Analysis Towards the Geochemistry of Particulate Matter Exchange Between Continent-Atmosphere-Ocean, <i>Journal of Radioanalytical Chemistry</i> , 55: 445-452.
79ZEI 01	R. Zeisler, F. Lux, and H. Seidenberger (1979) Studies on the Distribution of Platinum in Tumor-Bearing Rats after the Administration of Pt Coordination Complexes used in Cancer Chemotherapy, in 79IAE 01, pp. 467-476.	80BYR 01	A. R. Byrne (1980) Unpublished Data; taken from 80KOS 02.
80AGE 01	H. Agemian, D. P. Sturtevant, and K. D. Austen (1980) Simultaneous Acid Extraction of Six Trace Metals from Fish Tissue by Hot-Block Digestion and Determination by Atomic Absorption Spectrometry, <i>Analyst</i> , 105: 125-130.	80CAN 01	C. E. Cann and S. G. Prussin (1980) Radiochemical Determination of Short-Lived Radionuclides in Neutron Activated Biological Samples, <i>International Journal of Applied Radiation and Isotopes</i> , 31: 446-447.
80AGE 02	H. Agemian and R. Thompson (1980) Simple Semi-automated Atomic Absorption Spectrometric Method for the Determination of Arsenic and Selenium in Fish Tissue, <i>Analyst</i> , 105: 902-907.	80CAS 01	V. R. Casella, C. Bishop, A. Glosby, and C. Phillips (1980) Radiochemical Determination of Uranium, Thorium, and Pb-210 in Coal and Coal Ash: Radioelement Analysis: Progress and Problems, Proceedings of the Twenty-third Conference on Analytical Chemistry in Energy Technology, W. S. Lyon (ed.), Ann Arbor Science Publishers, Ann Arbor, Michigan, p. 271.
80AGE 03	H. Agemian and E. Bedek (1980) A Semi-automated Method for the Determination of Total Arsenic and Selenium in Soils and Sediments, <i>Analytica Chimica Acta</i> , 119: 323-330.	80CHA 01	S. S. Chao and E. E. Pickett (1980) Trace Chromium Determination by Furnace Atomic Absorption Spectrometry Following Enrichment by Extraction, <i>Analytical Chemistry</i> , 52: 335-339.
80AHM 01	S. Ahmad, M. S. Chaudhary, and I. H. Qureshi (1980) Determination of Rare Earths in Low Grade Uranium Ores and SRM Rock by Instrumental Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 57: 185-193.	80CHA 02	M. S. Chaudhary, S. Ahmad, and I. H. Qureshi (1980) Simultaneous Determination of Thorium and Uranium in Ores and SRM by Instrumental Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 57: 137-146.
80AND 01	D. L. Anderson, M. Failey, G. Gordon, and W. Zoller (1980) Instrumental Prompt Gamma Activation Analysis of Energy Related Samples and Standards, Fourth International Conference on Nuclear Methods in Environmental and Energy Research, University of Missouri, preprint.	80CHA 08	C. L. Chakrabarti, C. C. Wan, and W. C. Li (1980) Direct Determination of Traces of Copper, Zinc, Lead, Cobalt Iron, and Cadmium in Bovine Liver by Graphite Furnace Atomic Absorption Spectrometry using the Solid Sampling and the Platform Techniques, <i>Spectrochimica Acta</i> , 35B: 93-105.
80AND 01	Anonymous (1980) LECO CR-12 Carbon Determinator, LECO Corporation, St. Joseph Michigan.	80CHA 09	C. L. Chakrabarti, C. C. Wan, and W. C. Li (1980) Atomic Absorption Spectrometric Determination of Cd, Pb, Zn, Cu, Co, and Fe in Oyster Tissue by Direct Atomization from the Solid State using the Graphite Furnace Platform Spectrochimica Acta, 35B: 547-560.
80ARD 01	H. S. Arora, C. Pugh, L. Hossner, and J. Dixon (1980) Forms of Sulfur in East Texas Lignite Coal, <i>Journal of Environmental Quality</i> , 9: 383-386.	80CHR 01	J. D. Christensen and L. Kryger (1980) Reductive Potentiometric Stripping Analysis, <i>Analytica Chimica Acta</i> , 118: 53-64.
80AUG 01	J. H. Augustson, J. W. Haynes, and T. W. Sanders (1980) The Determination of Uranium in Biological Materials by Neutron Activation Analysis using the Fission Product I-134, <i>Journal of Radioanalytical Chemistry</i> , 60: 373-383.	80CLA 01	P. J. Clark, R. Zingaro, K. Irgolic, and A. McGinley (1980) Arsenic and Selenium in Texas Lignite, <i>International Journal of Environmental Analytical Chemistry</i> , 7: 295-314.
80BER 01	C. Berthelot, G. Carraro, and V. Verdingh (1980) Non-destructive Multielement Photon Activation Analysis of River Sediments, <i>Journal of Radioanalytical Chemistry</i> , 60: 443-451.	80CRE 01	E. A. Crecelius, E. A. Leppel, J. C. Laul, L. A. Rencitelli, and R. L. McKeever (1980), Background Air Particulate Chemistry near Colstrip, Montana, <i>Environmental Science and Technology</i> , 14: 422-428.

CODE N	REFERENCE
B0DAL 01 P. Dalheim (1980)	Application of the Fundamental Parameter Model to Energy Dispersive X-ray Fluorescence Analysis of Complex Silicates, <i>Advances in X-ray Analysis</i> , New York, Plenum Press, 23: 71.
B0DOM 01 E. M. Donaldson (1980)	Determination of Chromium in Ores, Rocks, and Related Materials, Iron, Steel, and Nonferrous Alloys by Atomic Absorption Spectrophotometry after Separation by Tribenzyllamine-Chloroform Extraction, <i>Talanta</i> , 27: 779-786.
B0DOR 01 A. Dornemann and H. Kleist (1980)	Bestimmung von Nanospuren Nickel in Biologischem Matrix, <i>Fresenius Zeitschrift für Analytische Chemie</i> , 300: 197-199.
B0DSI 01 A. P. D'Silva, G. W. Rice, and V. A. Fassel (1980)	Atmospheric Pressure Active Nitrogen (APAN) - A New Source for Analytical Spectroscopy, <i>Applied Spectroscopy</i> , 34: 578.
B0DUM 01 R. Dumarey, R. Heindryckx, and R. Dams (1980)	Determination of Mercury in Environmental Standard Reference Materials by Pyrolysis, <i>Analytica Chimica Acta</i> , 118: 381-383
B0DUP 01 S. Dupire and M. Hoenig (1980)	Influence des Matrices Complexes sur la Determination des Elements en Trace, <i>Analisis</i> , 8: 153-158.
B0DYC 01 P. M. van Dyck and R. W. van Grieken (1980)	Absorption Correction via Scattered Radiation in Energy Dispersive X-ray Fluorescence Analysis for Samples of Variable Composition and Thickness, <i>Analytical Chemistry</i> , 52: 1859-1864.
B0EDD 01 B. T. Eddy, J. I. W. Watterson, and C. S. Erasmus (1980)	Preparation of Synthetic Standards for use in Instrumental Neutron Activation Analysis, <i>Geostandards Newsletter</i> , 4: 229
B0EPS 01 M. S. Epstein and J. D. Winefordner (1980)	Precision and Linearity of Determinations at High Concentrations in Atomic Absorption Spectrometry with Horizontal Rotation of the Burner, <i>Talanta</i> , 27: 177-180.
BDEPS 02 M. S. Epstein, J. Bradshaw, S. Bayer, J. Bower, E. Voigtman, and J. D. Winefordner (1980), Application of Laser-Excited Atomic Fluorescence Spectrometry to the Determination of Nickel and Tin, <i>Applied Spectroscopy</i> , 34: 372-376.	
B0EPS 03 M. S. Epstein, N. Omenetto, S. Nikdel, J. Bradshaw, and J. D. Winefordner (1980), Inductively Coupled Plasma as an Excitation Source for Flame Atomic Fluorescence Spectrometry Analytical Chemistry, 52: 284-287.	
B0EPS 04 M. S. Epstein, S. Bayer, J. Bradshaw, E. Voigtman, and J. Winefordner (1980), Application of Laser-excited Atomic Fluorescence Spectrometry to the Determination of Iron, <i>Spectrochimica Acta</i> , 35B: 233-237.	
B0EVA 01 W. Evans, D. Dellar, B. Lucas, F. Jackson, and J. Read (1980)	Observations on the Determination of Total Copper, Iron, Manganese, and Zinc in Foodstuffs by Flame Atomic Absorption Spectrophotometry, <i>Analyst</i> , 105: 529-543.
B0FAA 01 A. Faanhof, H. A. Das, and J. Zonderhuis (1980)	Possibilities of the Elemental Analysis of Dry Biological Material by Fast Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 56: 173-184.
B0FLO 01 M. A. Floyd, V. A. Fassel, and A. P. D'Silva (1980)	Computer-Controlled Scanning Monochrometer of the Determination of 50 Elements in Geochemical and Environmental Samples by Inductively Coupled Plasma-Atomic Emission Spectrometry, <i>Analytical Chemistry</i> , 52: 2168-2173.

CODE N	REFERENCE
B0FUD 01 N. Furukawa and A. Kawase (1980)	Determination of Cobalt in Plant Materials by Graphite Furnace Atomic Absorption Spectrometry after Solvent Extraction, <i>Bunseki Kagaku</i> , 29: 6-11.
B0GAL 02 M. Gallorini and E. Orvini (1980)	The Role of Radiochemical Neutron Activation Analysis in Certifying Selected Trace Element Contents in Biological Related Matrices, in B0BRA 01, pp. 675-699.
B0GAR 01 S. Garcia, W. Hensley, M. Minor, M. Denton, and M. Fukui (1980), An Automated Multidetector System for Instrumental Neutron Activation Analysis of Geological and Environmental Materials, Presented at the American Nuclear Society Meeting Puerto Rico.	
B0GER 01 M. Germani, I. Gokmen, A. Sigleo, G. Kowalczyk, I. Olmez, A. Small, D. Anderson, M. Failey, M. Gulovali, C. Choquette, E. Lepel, G. Gordon, and W. Zoller (1980), Concentrations of Elements in the National Bureau of Standards' Bituminous and Subbituminous Coal Standard Reference Materials, <i>Analytical Chemistry</i> , 52: 240-245.	
B0GIN 01 J. H. van Ginkel and J. Sinnave (1980)	Determination of Total Nitrogen in Plant Material with Nessler's Reagent by Continuous-Flow Analysis, <i>Analyst</i> , 105: 1199-1203.
B0GLA 01 E. Gladney, D. Perrin, W. Hensley, and M. Bunker (1980)	Uranium Content of 25 Silicate Reference Materials, <i>Geostandards Newsletter</i> , 4: 243-246.
B0GLA 03 E. S. Gladney, D. Perrin, J. Balagna, and C. Warner (1980)	Evaluation of a Boron-Filtered Epithermal Neutron Irradiation Facility, <i>Analytical Chemistry</i> , 52: 2128-2132.
B0GLA 04 E. S. Gladney, D. R. Perrin, and W. K. Hensley (1980)	Determination of Uranium in NBS Biological Standard Reference Materials by Delayed Neutron Assay, <i>Journal of Radioanalytical Chemistry</i> , 59: 249-251.
B0GRE 01 R. R. Greenberg (1980)	Simultaneous Determination of Mercury and Cadmium in Biological Materials by Radiochemical Neutron Activation Analysis, <i>Analytical Chemistry</i> , 52: 676-679.
B0GVA 01 I. Gvardjancic, L. Kosta, and M. Dermelj (1980)	Determination of Iodine in Reference Materials by Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 58: 359-365.
B0HAA 01 W. J. Haas and V. A. Fassel (1980)	Inductively Coupled Plasma Atomic Emission Spectroscopy, Elemental Analysis of Biological Materials, IAEA Technical Report series no. 197, pp. 167-199.
B0HAN 01 R. Hanninen, J. Raisanen, and A. Anttila (1980)	Elemental Analysis of Li and B with Proton Induced Gamma-ray Reactions, Radiochemical and Radioanalytical Letters, 44: 201-206.
B0HEN 01 W. M. Henry and K. T. Knapp (1980)	Compound Forms of Fossil Fuel Fly Ash Emissions, <i>Environmental Science and Technology</i> , 14: 450-456.
B0HEY 01 K. Heydorn, E. Damsgaard, and B. Reitz (1980)	Systematic Differences in the Determination of Vanadium in Standard Reference Material 1571 Orchard Leaves, <i>Analytical Chemistry</i> , 52: 1045-1049.

CODE N	REFERENCE
80HIT 02	A. Hitchen and G. Zechanowitsch (1980) Chelatometric Determination of Calcium and Magnesium in Iron Ores, Slags, Anorthosite, Limestone, Cu-Ni-Pb-Zn Ores, and Divers Materials, <i>Talanta</i> , 27: 269-275.
80HOE 01	D. Hoede, J. Zonderhuis, and H. A. Das (1980) The Determination of Bromine in Dry Biological Material by Instrumental Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 56: 199-202.
80HON 01	P. K. Hon, W. W. Lau, W. C. Cheung, and M. C. Wong (1980) Atomic Absorption Spectrometric Determination of As, Bi, Pb, Sb, Se, and Sn with a Flame-Heated Silica T-Tube after Hydride Generation, <i>Analytica Chimica Acta</i> , 115: 355-359.
80IID 01	C. Iida, T. Uchida, and I. Kojima (1980) Decomposition of Bovine Liver in a Sealed Teflon Vessel for Determination of Metals by Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 113: 365-368.
80IWA 01	Y. Iwata, K. Matsumoto, and K. Fuwa (1980) Determination of Chromium in Rocks and Sediments by Energy Dispersive X-ray Fluorescence Spectrometry: Evaluation of the Effectiveness of Internal Standards and Briquetting Samples, <i>Bunseki Kagaku</i> , 29: 640-644.
80JAC 01	F. J. Jackson, J. I. Read, and B. E. Lucas (1980) Determination of Total Chromium, Cobalt, and Silver in Foodstuffs by Flame Atomic Absorption Spectrophotometry, <i>Analyst</i> , 105: 359-370.
80JAR 01	J. O. Jarvisalo, J. Kilpio, and N.-E. L. Saris (1980) Toxicity of Cadmium to Renal Mitochondria when Administered in Vivo and in Vitro, <i>Environmental Research</i> , 22: 217-223.
80KAN 01	Y. Kanda, T. Oikawa, and T. Niwaguchi (1980) Multi-element Determination of Trace Elements in Glass by Instrumental Photon Activation Analysis, <i>Analytica Chimica Acta</i> , 121: 157-163.
80KAT 01	T. Kato and M. Kato (1980) Multielement Determination in Floor Sediments of the Japan Sea by Nondestructive Photon Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 57: 105-112.
80KHA 02	S. R. Khalil, D. W. Koppenaal, and W. O. Ehmann (1980) Oxygen Concentrations in Coal and Fly Ash Standards, <i>Analytical Letters</i> , 13: 1063-1071.
80KIR 01	S. J. Kirchner, H. Oona, S. Perron, Q. Fernando, J. Lee, and H. Zeitlin (1980), Proton-Induced X-ray Emission Analysis of Deep-sea Ferromanganese Nodules, <i>Analytical Chemistry</i> , 52: 2195-2201.
80KNA 01	D. Knab and E. S. Gladney (1980) Determination of Selenium in Environmental Materials by Neutron Activation and Inorganic Ion Exchange, <i>Analytical Chemistry</i> , 52: 825-828.
80KOH 01	T.-S. Koh (1980) Microwave Drying of Biological Tissues for Trace Determination, <i>Analytical Chemistry</i> , 52: 1978-1979.
80KOP 01	D. W. Koppenaal, R. Lett, F. Brown, and S. Manahan (1980) Determination of Ni, Cu, Se, Cd, Tl, and Pb in Coal Gasification Products by Isotope Dilution Spark Source Mass Spectrometry, <i>Analytical Chemistry</i> , 52: 44-49.

CODE N	REFERENCE
80KOR 01	V. Korunova and J. Dedina (1980) Determination of Trace Concentrations of Hg in Biological Materials after Digestion under Pressure in Nitric Acid Catalysed by Vanadium Pentoxide, <i>Analyst</i> , 105: 48-51.
80KOS 01	K. N. Kostadinov and R. G. Djingova (1980) Trace Element Investigation of Coal Samples by Thermal and Epithermal Neutron Activation Analysis, <i>Radiochemical and Radioanalytical Letters</i> , 45: 297-304.
80KOS 02	L. Kosta (1980) Reference Samples for Trace Elements in Biological Materials and Associated Analytical Problems, <i>Elemental Analysis of Biological Materials: Current Problems and Techniques with Special Reference to Trace Elements</i> , IAEA Technical Report series no. 197, Vienna, pp. 317-345.
80KUL 01	A. I. Kulathilake and A. Chatt (1980) Determination of Molybdenum in Sea and Estuarine Water with Beta-Naphthoquin Oxime and Neutron Activation, <i>Analytical Chemistry</i> , 52: 828-833.
80KUM 01	J. Kumpulainen (1980) Determination of Chromium in Human Milk and Urine by Graphite Furnace Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 113: 355-359.
80LAB 03	J. J. Labrecque and H. Schorin (1980) Analysis of the Major Constituents in Venezuelan Laterites: A Comparison of Atomic Absorption, X-ray Fluorescence, and Classical Methods, <i>Applied Spectroscopy</i> , 34: 39-43.
80LAK 01	E. L. Lakoma (1980) Use of Neutron Activation Analysis in the Determination of Elements in Human Cerebrospinal Fluid, in 80BRA 01, p. 97.
80LAN 01	F. J. Langmyhr and U. Aadalen (1980) Direct Atomic Absorption Determination of Copper, Nickel, and Vanadium in Coal and Petroleum Coke, <i>Analytica Chimica Acta</i> , 115: 365-368.
80LAU 01	O. W. Lau and S. F. Cham (1980) Spectrophotometric Determination of Calcium with Chlorindazon C, <i>Mikrochimica Acta (Wien)</i> , 1980/1: 465-474.
80LEG 01	P. A. Legotte, W. C. Rosa, and D. C. Sutton (1980) Determination of Cadmium and Lead in Urine and Other Biological Samples by Graphite Furnace Atomic Absorption Spectrometry, <i>Talanta</i> , 27: 39-44.
80LOW 01	B. Lonnerdal, M. Clegg, C. Keen, and L. Hurley (1980) Effects of Wet Ashing Techniques on the Determination of Trace Element Concentrations in Biological Samples, in 80BRA 01, pp. 619-629.
80MAE 01	W. Maenhaut, L. de Reu, H. van Rinsvelt, J. Cafmeyer, and P. van Espen (1980), Particle Induced X-ray Emission (PIXE) Analysis of Biological Materials: Precision, Accuracy, and Application to Cancer Tissues, <i>Nuclear Instruments and Methods</i> , 168: 557-562.
80MCC 01	J. McCormick (1980) Determination of Total Sulfur in Fuel Oils by Ion Chromatography, <i>Analytica Chimica Acta</i> , 121: 233-238.
80MIC 01	R. Michel, J. Hofmann, and J. Zilkens (1980) Trace Element Behaviour of Human and Mammalian Tissues During Excessive Supply of Metals, in 80BRA 01, p. 137.

CODE N	REFERENCE	CODE N	REFERENCE
80NAD 01	R. A. Nadkarni (1980) Multitechnique Multielement Analysis of Coal and Fly Ash, Analytical Chemistry, 52: 929-935.	80SCH 07	H. Schwenke and J. Knoth (1980) High-Sensitivity Multielement Trace Analysis using EDXRF Spectrometry with Multiple Total Reflection of the Exciting Beam, in 80BRA 01, pp. 307-317.
80NAK 01	S. Nakamura, N. Fudagawa, and A. Kawase (1980) Determination of Antimony in Plant Materials by Zeeman Atomic Absorption Spectrometry after Coprecipitation with Manganese Oxide, Bunseki Kagaku, 29: 477-482.	80SCH 08	P. Schramel, A. Wolf, and B. J. Klose (1980) Analytical Pretreatment of Biological Material by Wet Ashing Methods, in 80BRA 01, pp. 610-617.
80NEV 01	J. Neve, M. Hanocq, and L. Molle (1980) Critical Study of Some Wet Digestion Methods for Decomposition of Biological Materials for the Determination of Total Se and Se(VI), Mikrochimica Acta (Wien), 1980: 259-269.	80SEG 01	C. Segebade, H.-U. Fusban, and H.-P. Weise (1980) Analysis of some Toxic Components of Environmental Samples by High Energy Photon Activation, Journal of Radioanalytical Chemistry, 59: 399-405.
80NOR 01	L. de Norre, J. op de Beeck, and J. Hoste (1980) Determination of Fluorine in Zinc Ores using an Isotope Neutron Source Based Automated Neutron Activation Analysis System, Journal of Radioanalytical Chemistry, 59: 453-466.	80SHI 01	T. Shigematsu and K. Kudo (1980) Substoichiometric Extraction of Chromium, Journal of Radioanalytical Chemistry, 59: 63-73.
80POL 01	J. E. Poldoski (1980) Determination of Pb and Cd in Fish and Clam Tissue by Atomic Absorption Spectrometry with a Mo and La Treated Pyrolytic Graphite Atomizer, Analytical Chemistry, 52: 1147-1151.	80SLO 01	H. A. van der Sloot, G. Wals, C. Weers, and H. Das (1980) Simultaneous Elimination of Na-24, K-42, Br-82, and P-32 in the Determination of Trace Elements in Biological Materials by Neutron Activation Analysis, Analytical Chemistry, 52: 112
80PRE 01	J. R. Preer, H. Sekhon, B. Stephens, and M. Collins (1980) Factors Affecting Heavy Metal Content of Garden Vegetables, Environmental Pollution, 1: 95-104.	80SMI 01	G. R. Smith (1980) Rapid Determination of Total Sulfur in Plants and Soils by Combustion Sulfur Analysis, Analytical Letters, A13: 465-471
80RAP 01	S. E. Raptis, W. Wegscheider, G. Knapp, and G. Tolg (1980) X-ray Fluorescence Determination of Trace Selenium in Organic and Biological Matrices, Analytical Chemistry, 52: 1292-1296.	80STO 02	T. R. Stolzenburg and A. W. Andren (1980) A Simple Acid Digestion Method for the Determination of Ten Elements in Ambient Aerosols by Flame Atomic Absorption Spectrometry, Analytica Chimica Acta, 118: 377-380.
80RAP 02	S. Raptis, G. Knapp, A. Meyer, and G. Tolg (1980) Systematische Fehler bei der Selenbestimmung im NG/G-Bereich in Biologischen Matrices nach dem Hydrid-AAS-Verfahren, Fresenius Zeitschrift fur Analytische Chemie, 300: 18-21.	80STU 01	O. Stulztaut, B. Maziere, and S. Ly (1980) Gallium Determination in Biological Samples, Journal of Radioanalytical Chemistry, 55: 291-295.
80RAP 03	S. Raptis, W. Wegscheider, G. Knapp, and G. Tolg (1980) X-ray Fluorescence Determination of Traces of Selenium in Organic and Biological Matrices, Fresenius Zeitschrift fur Analytische Chemie, 301: 103.	80SUZ 01	N. Suzuki, S. Nakamura, and H. Imura (1980) Substoichiometric Isotope Dilution Analysis of Iron in Biological Materials by the 8-Quinolinol Extraction, Journal of Radioanalytical Chemistry, 57: 37-46.
80RIL 01	G. H. Riley and M. J. Korsch (1980) Natural Reactor Studies, in Proceedings of the International Uranium Symposium on the Pine Creek Geosyncline, IAEA, Vienna, pp. 407-416.	80SUZ 02	M. Suzuki, Y. Dokiya, S. Yamazaki, and S. Toda (1980) A New Type of Biological Reference Material for Multielement Analysis: The Fungus Penicillium Ochro-Chloron ATCC 36741, Analyst, 105: 944-949.
80ROS 01	K. J. R. Rosman and J. R. de Laeter (1980) Mass Spectrometric Isotope Dilution Determination of Cadmium in Geochemical Reference Samples, Geostandards Newsletter, 4: 1-3.	80SZY 01	F. J. Szydlowski, K. Monti, S. Michalak, and D. Dumire (1980), A Practical Voltammetric Method for the Analysis of Lead in Cereal and Feed Products using a Tubular Hg Thin Film Electrode, Analytical Letters, A13: 529-542.
80SAT 01	T. Sato and T. Kato (1980) Determination of Trace Elements in Subcellular Fractions of Liver and Kidney from Monkey by Thermal Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 42: 227-234.	80TAM 01	G. K. H. Tam and G. LeCroix (1980) Determination of Arsenic in Urine and Feces by Dry Ashing, Atomic Absorption Spectrometry, International Journal of Environmental Analytical Chemistry, 8: 283-290.
80SCH 02	T. Schofield, E. Gladney, F. Miera, and P. Trujillo (1980) Comparative Determination of C, N, and H in Environmental Standard Reference Materials by Instrumental Combustion Analysis and Thermal Neutron Capture Gamma-ray Spectrometry Analytical Letters, 13: 75-83.	80TON 01	S. L. Tong and W.-K. Lew (1980) Stationary Cold-Vapor Atomic Absorption Spectrometric Attachment for Determination of Total Mercury in Undigested Fish Samples, Analytical Chemistry, 52: 581-583.
80SCH 05	P. Schramel, A. Wolf, R. Seif, and B.-J. Klose (1980) Eine neue Apparatur zur Druckveraschung von Biologischem Material, Fresenius Zeitschrift fur Analytische Chemie, 302: 62-64.	80TOU 01	R. E. Tout and A. Chatt (1980) A Critical Evaluation of Short-Lived and Long-Lived Neutron Activation Products for Trace Element Determinations, Analytica Chimica Acta, 118: 341-358.
		80UCH 01	T. Ichida, I. Kojima, and C. Iida (1980) Determination of Metals in Small Samples by Atomic Absorption and Emission Spectrometry with Discrete Nebulization, Analytica Chimica Acta, 116: 205-210.

CODE N	REFERENCE	CODE N	REFERENCE
80URE D1	A. M. Ure, G. J. Ewen, and M. C. Mitchell (1980) A Three-channel Flame Atomic Absorption/Emission Spectrometer for the Rapid, Routine Determination of Major Cations in Soil Extracts and Plant Ash Solutions, <i>Analytica Chimica Acta</i> , 118: 1-9.	81BAR 02	R. M. Barnes, editor (1981) Developments in Atomic Plasma Spectrochemical Analysis, Proceedings of the International Winter Conference, San Juan, Puerto Rico, Heyden, London.
80VAL D1	M. T. G. Valentini, N. Genova, and R. Stella (1980) Determination of Cd, Cu, and Hg in Environmental Matrices by Destructive Neutron Activation Analysis, <i>Radiochemical and Radioanalytical Letters</i> , 44: 359-368.	81BER 01	S. S. Berman, J. W. McLaren, and D. S. Russel (1981) Application of the Inductively Coupled Plasma to the Analysis of Marine Samples, in 81BAR 02, pp. 586-600.
80VER 01	J. Versieck, L. Vanbellenbergh, G. Lemey, F. Barbier, R. Cornelis, and J. de Rudder (1980), Determination of Molybdenum in Serum, in 80BRA 01, pp. 273-282.	81BIS 01	K. M. Bisgard, J. Laursen, and B. S. Nielsen (1981) Energy-Dispersive XRF Spectrometry using Secondary Radiation in a Cartesian Geometry, <i>X-ray Spectrometry</i> , 10: 17-19.
80VIJ 01	P. N. Vijan and D. Leung (1980) Reduction of Chemical Interference and Speciation Studies in the Hydride Generation-Atomic Absorption Method for Selenium, <i>Analytica Chimica Acta</i> , 120: 141-146.	81BLA 01	M. S. Black and R. F. Browner (1981) Volatile Metal-Chelate Sample Introduction for Inductively Coupled Plasma-Atomic Emission Spectrometry, <i>Analytical Chemistry</i> , 53: 249-253.
80VIR D1	H. S. Virk (1980) Intercalibration of Glass Dosimeters for Neutron Fluence Determination, <i>International Journal of Applied Radiation and Isotopes</i> , 31: 649-651.	81BLA 02	M. S. Black, M. B. Thomas, and R. F. Browner (1981) Determination of Metal Chelates by Inductively Coupled Plasma Atomic Emission Spectrometry and Applications to Biological Materials, <i>Analytical Chemistry</i> , 53: 2224-2228.
80WAL 01	W. J. Walker and R. H. Dowdy (1980) Elemental Composition of Barley and Ryegrass Grown on Acid Soils Amended with Scrubber Sludge, <i>Journal of Environmental Quality</i> , 9: 27-30.	81BLA 03	M. Blanusa and D. Breski (1981) Comparison of Dry and Wet Ashing Procedures for Cadmium and Iron Determination in Biological Material by Atomic Absorption Spectrophotometry, <i>Talanta</i> , 28: 681-684.
80WAN 01	L. E. Wangen, E. S. Gladney, and W. K. Hensley (1980) Determination of Selenium in Environmental Standard Reference Materials by a Gamma-Gamma Coincidence Method using Ge(Li) Detectors, <i>Analytical Chemistry</i> , 52: 765-767.	81BRO 01	P. J. Brooke and W. H. Evans (1981) Determination of Total Inorganic Arsenic in Fish, Shellfish, and Fish Products, <i>Analyst</i> , 106: 514-520.
80WHI D1	L. E. White and M. H. Carter (1980) Determination of Mercury in Rocks, Sediments, and Soils by Flameless Atomic Absorption, Oak Ridge Y-12 Plant report Y/DK-254, Oak Ridge, Tennessee.	81BYR 01	A. R. Byrne (1981) Determination of Palladium in Biological Samples by Neutron Activation Analysis, <i>Mikrochimica Acta (Wien)</i> , 1981: 323-329.
80WOI 01	J. R. W. Woittiez and H. A. Das (1980) Multielement Analysis by Neutron Activation to Short-Lived Radionuclides with Previous Removal of Sodium: Application to Dry Biological Standard Materials, in 80BRA 01.	81CAN 01	A. Y. Cantillo (1981) Trace Element Deposition Histories in the Chesapeake Bay, Ph.D. Dissertation, University of Maryland, pp. 216-238.
80YAM 01	M. Yamashita and N. Suzuki (1980) Photon Activation Analysis of Trace Metals in Biological Materials via Collection of Metal Tropolone-5-Sulfonate Complexes onto Anion-Exchange Resin, <i>Journal of Radioanalytical Chemistry</i> , 60: 73-85.	81CAR 01	R. Carpenter and T. M. Beasley (1981) Plutonium and Americium in Anoxic Marine Sediments: Evidence Against Remobilization, <i>Geochimica et Cosmochimica Acta</i> , 45: 1917-1930.
80YAN 01	K. Yanagi (1980) A New Procedure for Determining Arsenic in Natural Waters by means of Atomic Absorption Spectrophotometry combined with the Techniques of Arsine Evolution by Sodium Borohydride and its Collection in a Trap of Liquid Nitrogen, <i>Bunseki Kagaku</i> , 29: 194-198.	81CAR 02	J. W. Carnahan, K. J. Mulligan, and J. A. Caruso (1981) Element-Selective Detection for Chromatography by Plasma Emission Spectrometry, <i>Analytica Chimica Acta</i> , 130: 227.
81AHM 01	S. Ahmad, M. S. Chaudhary, and I. H. Qureshi (1981) Instrumental Neutron Activation Analysis of Obsidian Rock, <i>Journal of Radioanalytical Chemistry</i> , 67: 119-125.	81CAS 01	V. Casella, C. Bishop, A. Glosby, and C. Phillips (1981) Anion Exchange Method for the Sequential Determination of Uranium, Thorium, and Lead-210 in Coal and Coal Ash, <i>Journal of Radioanalytical Chemistry</i> , 62: 257-266.
81ALL 01	M. Allegini, K. W. Boyer, and J. T. Tanner (1981) Neutron Activation of Total Diet Food Composites for Iodine, <i>Journal of the Association of Official Analytical Chemists</i> , 64: 1111-1115.	81CHA 01	C. L. Chakrabarti, C. Wan, H. Mamed, and P. Bertels (1981) Matrix Interferences in Graphite Furnace Atomic Absorption Spectrometry by Capacitive Discharge Heating, <i>Analytical Chemistry</i> , 53: 444-450.
81ARA 01	N. M. Arafat and W. A. Gloschenko (1981) Method for the Simultaneous Determination of As, Al, Fe, Zn, Cr, and Cu in Plant Tissue Without the Use of Perchloric Acid, <i>Analyst</i> , 106: 1174-1178.	81CHE 01	J. H. Chen and G. J. Wasserburg (1981) The Isotopic Composition of Uranium and Lead in Allende Inclusions and Meteoritic Phosphates, <i>Earth and Planetary Science Letters</i> , 52: 1-15.
		81CHE 02	J. H. Chen and G. J. Wasserburg (1981) Isotopic Determination of Uranium in Picomole and Subpicomole Quantities, <i>Analytical Chemistry</i> , 53: 2060-2067.

CODE N	REFERENCE
81CHR 01	L. H. Christensen and A. Agerbo (1981) Determination of Sulfur and Heavy Metals in Crude Oil and Petroleum Products by Energy-dispersive X-ray Fluorescence Spectrometry and Fundamental Parameter Approach, <i>Analytical Chemistry</i> , 53: 1788-1792.
81CHU 01	S. E. Church (1981) Multielement Analysis of Fifty-four Geochemical Reference Samples using Inductively Coupled Plasma Atomic Emission Spectrometry, <i>Geostandards Newsletter</i> , 5: 133-160.
81CLE 01	M. S. Clegg, C. Keen, B. Lonnderal, and L. Hurley (1981) Influence of Ashing Techniques on the Analysis of Trace Elements in Animal Tissue: I. Wet Ashing, <i>Biological Trace Element Research</i> , 3: 107-115.
81CLE 02	M. S. Clegg, C. Keen, B. Lonnderal, and L. Hurley (1981) Influence of Ashing Techniques on the Analysis of Trace Elements in Biological Samples: II. Dry Ashing, <i>Biological Trace Element Research</i> , 3: 237-244.
81COH 02	S. Cohen, S.-G. Chang, S. Markowitz, and T. Novakov (1981) Role of Fly Ash in Catalytic Oxidation of S(IV) Slurries, <i>Environmental Science and Technology</i> , 15: 1498-1502.
81COR 01	R. Cornelis, J. Versieck, A. Desmet, L. Mees, and L. Vanballenberghe (1981), Neutron Activation Analysis of the Trace Element Molybdenum in Urine of Healthy Persons, <i>Bulletin des Societes Chimiques Belges</i> , 90: 289-295.
81COR 02	R. Cornelis, J. Versieck, L. Meers, J. Hoste, and F. Barbier (1981), The Ultratrace Element Vanadium in Human Serum, <i>Biological Trace Element Research</i> , 3: 257-263.
81COX 01	D. H. Cox and A. E. Bibb (1981) Hydrogen Selenide Evolution-Electrothermal Atomic Absorption Method for Determining Nanogram Levels of Total Se, <i>Journal of the Association of Official Analytical Chemists</i> , 64: 265.
81DAN 01	L.-G. Danielsson, D. Jagner, M. Josefson, and S. Westerlund (1981), Computerized Potentiometric Stripping Analysis for the Determination of Cadmium, Lead, Copper, and Zinc in Biological Materials, <i>Analytica Chimica Acta</i> , 127: 147-156.
81DIL 01	S. Dilli (1981) Determination of Vanadium in Petroleum Crudes and Fuel Oils by Gas Chromatography, <i>Analytica Chimica Acta</i> , 128: 109-119.
81DOG 01	S. Dogan, G. Nembrini, and W. Haerdi (1981) A Novel Approach for Determination of Sn, Pb, and Cu in Biological Samples and Sediments by Alternating Current Anodic Stripping Voltammetry, <i>Analytica Chimica Acta</i> , 130: 385-390.
81EBD 01	L. Ebdon, J. R. Wilkinson, and K. W. Jackson (1981) Determination of Sub-nanogram Amounts of Mercury by Cold Vapor Atomic Fluorescence Spectrometry with an Improved Gas-sheathed Atom Cell, <i>Analytica Chimica Acta</i> , 128: 45-55.
81FAR 01	J. G. Farmer and M. J. Gibson (1981) Direct Determination of Cadmium, Chromium, Copper, and Lead in Siliceous Standard Reference Materials from a Fluoboric Acid Matrix by Graphite Furnace Atomic Absorption Spectrometry, <i>Atomic Spectroscopy</i> , 2: 176-178.
81FON 01	H. A. Foner and I. Gal (1981) Accurate Spectrophotometric Method for the Determination of Silica in Rocks, Minerals, and Related Materials, <i>Analyst</i> 106: 521-528.

CODE N	REFERENCE
81FRA 01	G. Frauerwieser (1981) Private Communication, Technical University of Vienna, Austria.
81GAL 01	M. Gallorini, E. Orvini, A. Rolla, and M. Burdisso (1981) Destructive Neutron Activation Analysis of Toxic Elements in Suspended Materials Released from Refuse Incinerators, <i>Analyst</i> , 106: 328-334.
81GAL 02	M. Gallorini, E. Orvini, A. Rolla, and M. Burdisso (1981) Radiochemical Neutron Activation Analysis of Trace Elements in Suspended Materials Released from Refuse Incinerators, <i>Analytical Proceedings Published by the Royal Society of Chemistry (London)</i> , 18: 199-201.
81GLA 01	E. S. Gladney and D. Knab (1981) Determination of Selenium in Twenty Geological Reference Materials by Neutron Activation and Inorganic Ion Exchange, <i>Geostandards Newsletter</i> , 5: 67-69.
81GLA 02	E. S. Gladney and D. R. Perrin (1981) Instrumental Thermal Neutron Activation Determination of 20 Elements in Nineteen Silicate Reference Materials, <i>Geostandards Newsletter</i> , 5: 113-124.
81GLA 03	E. S. Gladney, J. Owens, T. Gunderson, and W. Goode (1981) Quality Assurance for Environmental Analytical Chemistry: 1976-1979, Los Alamos Scientific Laboratory report LA-8730-MS, pp. 113-118.
81GLA 04	E. S. Gladney, W. Goode, D. Perrin, and C. Burns (1981) Quality Assurance for Environmental Analytical Chemistry: 1980, Los Alamos National Laboratory report LA-8966-MS, pp. 108-114.
81GOO 01	R. T. Goodpasture, R. J. McElhaney, and R. Morrow (1981) Analysis of Botanical Samples for 25 Elements using an Automated Inductively Coupled Plasma Spectrometer, in 81BAR 02, pp. 697-705.
81GOU 01	P. D. Goulden, D. H. J. Anthony, and K. D. Austen (1981) Determination of Arsenic and Selenium in Water, Fish, and Sediments by Inductively Coupled Argon Plasma Emission Spectrometry, <i>Analytical Chemistry</i> , 53: 2027-2029.
81HAB 01	S. Habib and M. J. Minski (1981) Neutron Activation Technique for the Analysis of the Soluble and Particle Fractions of River Water, <i>Journal of Radioanalytical Chemistry</i> , 63: 379-395.
81HAH 01	M. H. Haha, R. Kuennen, J. Caruso, and F. Ficke (1981) Title Unknown, <i>Journal of Agricultural and Food Chemistry</i> , preprint.
81HAM 01	H. Hamaguchi (1981) Private Communication, taken from 81YAM 01.
81HAN 01	H.-B. Han, G. Kaiser, and G. Tolg (1981) Decomposition of Biological Materials, Rocks, and Soils in Pure Oxygen under Dynamic Conditions for the Determination of Se at Trace Levels, <i>Analytica Chimica Acta</i> , 128: 9-21.
81HIN 01	E. J. Hinderberger, M. Kaiser, and S. Koirtyohann (1981) Furnace Atomic Absorption Analysis of Biological Samples using the L'Vov Platform and Matrix Modification, <i>Atomic Spectroscopy</i> , 2: 1-7.
81HO 02	R. Ho (1981) Title Unknown, M.S. Thesis, University of Toronto; taken from 84LAN 02.

CODE N	REFERENCE	CODE N	REFERENCE
81HOR 01	J. J. Horvath, J. O. Bradshaw, J. N. Bower, M. S. Epstein, and J. D. Winefordner (1981), Comparison of Nebulizer-Burner Systems for Laser-Excited Atomic Fluorescence Flame Spectrometry, <i>Analytical Chemistry</i> , 53: 6-9.	81LAN 01	F. J. Langmyhr and I. M. Dahl (1981) Atomic Absorption Spectrometric Determination of Phosphorus in Biological Materials, <i>Analytica Chimica Acta</i> , 131: 303.
81IMU 01	H. Imura and N. Suzuki (1981) Substoichiometric Isotope Dilution Analysis for Tin with Salicylideneamino-2-Thiophenol Complexation in Non-aqueous Medium, <i>Talanta</i> , 28: 73-79.	81LEE 01	S. W. Lee and J. C. Meranger (1981) Determination of Total Arsenic Species by Anodic Stripping Voltammetry, <i>Analytical Chemistry</i> , 53: 130-131.
81INU 01	T. Inui, S. Terada, and H. Tamura (1981) Determination of As by Arsine Generation with Reducing Tube Followed by Graphite Furnace Atomic Absorption Spectrometry, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 305: 189-192.	81MAR 01	O. F. Marino and J. O. Ingle (1981) Ion Exchange Separation of Cobalt from Alkaline Earth and Selected Transition Metals with Lophine Chemiluminescence Detection, <i>Analytical Chemistry</i> , 53: 292-294.
81JAC 01	K. W. Jackson, L. Ebdon, D. C. Webb, and A. G. Cox (1981) Determination of Lead in Vegetation by a Rapid Microsampling Cup Atomic Absorption Procedure with Solid Sample Introduction, <i>Analytica Chimica Acta</i> , 128: 67-74.	81MER 03	R. N. Merefield and J. H. Runnels (1981) The Inductively Coupled Plasma: An Important and Versatile Analytical Tool for the Petroleum Industry, in 81BAR 02, pp. 396-403.
81JIN 01	S. Jingxin, T. Shude, W. Yuqi, C. Bingru, Q. Qinfang, and Z. Shen (1981), Determination of 28 Trace Elements in Soils from Mount Qomolangma Region by INAA, taken from 81MTA 01.	81MEY 01	A. Meyer, C. Hofer, G. Knapp, and G. Tolg (1981) Selenbestimmung in UG/G und NG/G Bereich im Anorganischen und Organischen Matrices nach Verdampfungsalanalyse in Dynamischen System durch AAS, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 305: 1-10.
81KAH 01	H. L. Kahn, L. Cristiano, G. Oulude, and J. Sotera (1981) Automated Hydride Analysis, <i>American Laboratory</i> , 13(11): 136-144.	81MIZ 01	A. Mizuike and A. Iino (1981) Surface Treatment of Borosilicate Glass Beakers for Prevention of Sodium Contamination, <i>Analytica Chimica Acta</i> , 124: 427-430.
81KIB 01	T. Kiba (1981) Private Communication, in 81YAM 01.	81MOH 01	N. Mohamed and R. C. Fry (1981) Slurry Atomization Direct Atomic Spectrochemical Analysis of Animal Tissue, <i>Analytical Chemistry</i> , 53: 450-455.
81KIN 01	H. Kingston and P. A. Pella (1981) Preconcentration of Trace Metals in Environmental and Biological Samples by Cation Exchange Resin Filters for X-ray Spectrometry, <i>Analytical Chemistry</i> , 53: 223-227.	81MOL 01	A. Molokhia and A. Dyer (1981) Simultaneous Determination of Eight Trace Elements in Human Skin by Instrumental Neutron Activation Analysis, <i>Analyst</i> , 106: 1168-1173.
81KIT 01	K. Kitagawa, T. Manyo, and S. Tsuge (1981) Application of the Atomic Faraday Effect to the Trace Determination of Lead, <i>Spectrochimica Acta</i> , 36B: 9-20.	81MTA 01	Modern Trends in Activation Analysis (1981) Abstracts, Sixth International Conference, University of Toronto, Canada.
81KNA 01	G. Knapp, S. Raptis, G. Kaiser, G. Tolg, P. Schramel, and B. Schreiber (1981), A Partially Mechanized System for the Combustion of Organic Samples in a Stream of Oxygen with Quantitative Recovery of the Trace Elements, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 308: 97-103.	81MUN 01	R. C. Hunter and R. A. Grande (1981) Plant Tissue and Soil Extract Analysis by ICP-Atomic Emission Spectrometry, in 81BAR 02, pp. 653-672.
81KOS 01	K. Kostadinov and R. Ojingova (1981) Trace Element Analysis of Biological Materials by Thermal and Epithermal Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 63: 5-12.	81NAD 01	R. A. Nadkarni (1981) Determination of Volatile Elements in Coal and Other Organic Materials by Oxygen Bomb Combustion, <i>American Laboratory</i> , 13(8): 22-29.
81KRI 01	V. Krivan, H. Geiger, and H. E. Franz (1981) Bestimmung von Fe, Co, Cu, Zn, Se, Rb, und Cs in NBS-Ochsen-Leber Blutplasma und Erythrocyten durch INAA und AAS, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 305: 399-404.	81NAR 01	H. Narasaki (1981) Determination of Trace Hg in Milk Products and Plastics by Combustion in an Oxygen Bomb and Cold-vapor Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 125: 187-191.
81KUC 01	J. Kucera and J. J. M. de Goeij (1981) A Comparison of Two Separation Techniques using NaI(Tl) and Ge(Li) Spectrometry for Trace Element Determination in Biological Materials by Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 63: 23-40.	81NEU 01	D. R. Neuman and F. F. Munshower (1981) Rapid Determination of Molybdenum in Botanical Material by Electrothermal Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 123: 325-328.
81KUL 01	I. Kuleff, R. Ojingova, K. Kostadinov, and D. Todorovský (1981), Instrumental Neutron Activation Analysis of Trace Elements in Quartz, <i>Journal of Radioanalytical Chemistry</i> , 62: 187-194.	81NIS 01	Y. Hishikawa (1981) Private Communication, in 81YAM 01.
81KUL 02	I. Kuleff and K. Kostadinov (1981) Epithermal Neutron Activation Analysis of Uranium by Neptunium-239 using High Resolution Gamma Spectrometry, <i>Journal of Radioanalytical Chemistry</i> , 63: 397-404.	81NON 01	N. Nonaka, H. Higuchi, H. Hameguchi, and K. Tomura (1981) Losses of the Elements during Dry Ashing of Plant Materials, <i>Bunseki Kagaku</i> , 30: 599-604.

CODE N REFERENCE

810GU 01 K. Oguma and R. Kuroda (1981)  
Dry-column Chromatography of Uranium: Application to  
Chemical Analysis of Monazite and Phosphate Rock for Uranium  
*Mikrochimica Acta (Wien)*, 1981II: 57-67.

810HT 01 A. Ohta, T. Matsubayashi, and M. Itoman (1981)  
Energy-Dispersive XRF Spectrometric Determination of  
Phosphorus, Calcium, Iron, Zinc, and Strontium in Human  
Bones, *Advances in X-ray Chemical Analysis in Japan*, 12: 73.

810WE 01 J. W. Owens (1981)  
Private Communication, Environmental Surveillance Group,  
Los Alamos National Laboratory, Los Alamos, New Mexico.

81PAH 01 B. Pahlananpour, M. Thompson, and L. Thorne (1981)  
Simultaneous Determination of Trace Amounts of As, Sb, and  
Bi in Herbage by Hydride Generation and ICP Atomic Emission  
Spectrometry, *Analyst*, 106: 467-471.

81PAR 01 P. P. Parekh (1981)  
Energy-dispersive X-ray Fluorescence Analysis of  
Organic-rich Soils and Sediments, *Radiochemical and  
Radioanalytical Letters*, 50: 1-14.

81PIC 01 C. J. Pickford (1981)  
Determination of Arsenic by Emission Spectrometry using an  
Inductively Coupled Plasma Source and the Syringe Hydride  
Technique, *Analyst*, 106: 464-467.

81PIH 01 S. Pihlar, P. Valenta, and H. W. Nurnberg (1981)  
New High-Performance Analytical Procedure for the  
Voltammetric Determination of Nickel in Routine Analysis of  
Waters, Biological Materials, and Food, *Fresenius  
Zeitschrift fur Analytische Chemie*, 307: 337-346.

81POS 01 R. S. Posey and R. W. Andrews (1981)  
Determination of Se(IV) by Anodic Stripping Voltammetry  
with an In-situ Gold-Plated Rotating Glassy Carbon Disk  
Electrode, *Analytica Chimica Acta*, 124: 107-112.

81RAP 01 S. E. Raptis, W. Wegscheider, and G. Knapp (1981)  
The Determination of Arsenic at NG/G and PPM Levels in  
Organic and Biological Matrices, *Mikrochimica Acta (Wien)*,  
1981I: 93-97.

81REA 01 D. C. Reamer and C. Veillon (1981)  
Preparation of Biological Materials for Determination of  
Selenium by Hydride Generation-Atomic Absorption  
Spectrometry, *Analytical Chemistry*, 53: 1192-1195.

81REA 02 D. C. Reamer and C. Veillon (1981)  
Determination of Selenium in Biological Materials by Stable  
Isotope Dilution Gas Chromatography - Mass Spectrometry,  
*Analytical Chemistry*, 53: 2166-2169.

81REE 01 J. Reednick (1981)  
Spectroscopie Atomique: Excitation d'un Plasma de Haute  
Energie et Spectrometrie de Resolution Elevee, *Analisis*,  
9: 14-20.

81REL 01 R. E. Relm and D. D. Hawn (1981)  
Determination of Total Sulfur in Hydrocarbons by Reductive  
Pyrolysis with Polarographic Detection, *Analytical Chemistry*  
53: 1088-1093.

81ROB 02 G. Robaye, G. Weber, J. Delbrouck, I. Roelandts, P. Bartsch,  
and A. Collignon (1981), Attempts to Improve PIXE  
Quantitative Trace Element Analysis of Biomedical Materials,  
*Nuclear Instruments and Methods*, 181: 59-62.

CODE N REFERENCE

81SAI 01 S. O. Saied, D. Crumpton, and P. E. Francios (1981)  
The Validation of a PIXE System for Trace Element Analysis  
of Biological Samples, *Nuclear Instruments and Methods*,  
181: 53-57.

81SAS 01 C. S. Sastri, R. Caletka, and V. Krivan (1981)  
Simultaneous Determination of Boron and Lithium by Charged  
Particle Activation Analysis, *Analytical Chemistry*, 53: 765.

81SAS 02 C. S. Sastri, R. Caletka, and V. Krivan (1981)  
Analysis of Refractory Metals for Lithium, Boron, and  
Nitrogen by Charged Particle Activation Yielding Be-7 as the  
Indicator Radionuclide, taken from 81MTA 01.

81SEG 01 C. Segebade and H.-U. Fusban (1981)  
Uranium Analysis by Activation with 30 MeV Bremsstrahlung,  
*Radiochemical and Radioanalytical Letters*, 48: 311-328.

81SHA 01 P. G. Shaw, D. McKown, and S. E. Manahan (1981)  
Trace Element Determinations in Shale Oil Products by  
Neutron Activation, *Analytica Chimica Acta*, 123: 65-74.

81SHI 01 T. Shigematsu and K. Kudo (1981)  
Substoichiometric Determination of Phosphorus, *Journal of  
Radioanalytical Chemistry*, 67: 307-319.

81SLO 01 H. van der Sloot, K. Hoede, T. Klinkers, and H. Das (1981)  
The Determination of Arsenic, Selenium, and Antimony in  
Rocks, Sediments, Fly Ash, and Slag, in 81MTA 01.

81STR 01 W. B. Stroube, W. C. Cunningham, and M. Allegrini (1981)  
Activation Analysis Program of the USFDA at the NBSR, in  
NBS Reactor: Summary of Activities July 1979 to June 1980,  
NBS Technical Note 1142, pp. 186-188.

81SUZ 01 S. Suzuki, S. Hirai, and K. Noda (1981)  
Determination of Selenium in Herb Plants by Neutron  
Activation Analysis using a Coincidence Counting Method,  
*Bunseki Kagaku*, 31: 67-71.

81SYZ 01 F. Szydlowski, D. Dumire, E. Peck, R. Eggers, and W. Matson  
(1981), Simultaneous Determination of Fe(II), Fe(III), and  
Total Iron in Sphagnum Moss Peat by Programmable Voltammetry  
on a Graphite Tubular Electrode, *Analytical Chemistry*,  
53: 193-196.

81TAN 01 K. Tanabe, K. Chiba, H. Haraguchi, and K. Fuwa (1981)  
Determination of Mercury at the Ultratrace Level by  
Atmospheric Pressure Helium Microwave-Induced Plasma  
Emission Spectrometry, *Analytical Chemistry*, 53: 1450-1453.

81TOE 01 K. Toei and Y. Shimoishi (1981)  
Determination of Ultramicro Amounts of Selenium by Gas  
Chromatography With Electron-Capture Detection, *Talanta*,  
28: 967-972.

81TUR 01 K. E. Turner (1981)  
Private Communication, Bhp. Central Research Laboratories,  
Shortland, Australia.

81UCH 01 T. Uchida, I. Kojima, and C. Iida (1981)  
Application of an Automatically Triggered Digital Integrator  
to Flame Atomic Absorption Spectrometry of Copper using a  
Discrete Nebulisation Technique, *Analyst*, 106: 206-212.

81UCH 02 H. Uchida, Y. Shimoishi, and K. Toei (1981)  
Rapid Determination of Trace Amounts of Selenium in  
Biological Samples by Gas Chromatography with Electron  
Capture Detection, *Analyst*, 106: 757-762.

CODE N	REFERENCE
81UTH 01	E. Uthus, M. Collings, W. Cornatzer, and F. Nielsen (1981) Determination of Total Arsenic in Biological Samples by Arsine Generation and Atomic Absorption Spectrometry, <i>Analytical Chemistry</i> , 53: 2221-2224.
81VER 02	A. Verbueken, E. Michiels, and R. van Grieken (1981) Total Analysis of Plant Material and Biological Tissue by Spark Source Mass Spectrometry, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 309: 300-304.
81WAL 01	G. F. Wallace (1981) Application of a Sequential Scanning ICP to the Analysis of Geological Materials, <i>Atomic Spectrometry</i> , 2: 87-90.
81WAL 02	G. F. Wallace and R. D. Ediger (1981) Optimization of ICP Operating Conditions for the Determination of Sulfur in Oils, <i>Atomic Spectrometry</i> , 2: 169-172.
81WAN 01	L. E. Wangen (1981) Relationships Between the Elemental Composition and Particle Sizes of Aerosols With and Without Impact from a Coal-fired Power Plant, <i>Los Alamos Scientific Laboratory report LA-8759-MS</i> .
81WEI 01	A. D. Weiss, R. H. Savage, and G. M. Hieftje (1981) Development and Characterization of a 9-mm Inductively Coupled Argon Plasma Source for Atomic Emission Spectrometry, <i>Analytica Chimica Acta</i> , 124: 245-258.
81WIL 01	R. E. Williams, P. K. Hopke, and R. A. Meyer (1981) Trace Multielement Analysis using High-flux Fast-neutron Activation, <i>Journal of Radioanalytical Chemistry</i> , 63: 187.
81WIL 02	R. E. Williams (1981) Gamma-ray Spectrometry Following High-flux 14-MeV Neutron Activation, Ph.D. Thesis, University of Illinois, and Lawrence Livermore Laboratory report UCRL-53208.
81WOL D1	K. Wolnik, F. Fricke, M. Hahn, and J. Caruso (1981) Sample Introduction System for Simultaneous Determination of Volatile Elemental Hydrides and other Elements in Foods by Inductively Coupled Argon Plasma Emission Spectrometry, <i>Analytical Chemistry</i> , 53: 1030-1035.
81WOL D2	K. A. Wolnik, R. W. Kuennen, and F. L. Fricke (1981) Determination of Toxic and Nutritional Elements in Raw Agricultural Crops using ICAP Spectroscopy, in 81BAR 02, pp. 685-696.
81YAM 01	M. Yamamoto, T. Shohji, T. Kamamaru, and Y. Yamamoto (1981) Masking Effect of KI on the Interferences in the Atomic Absorption Spectrometric Determination of Sb utilizing Stibine Generation by Sodium Borohydride Tablet Reduction, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 305: 11-14.
81YAN 01	K. Yanagi and M. Ambe (1981) Determination of Arsenic in Biological, Environmental, and Geological Materials by Arsine Evolution Flameless Atomic Absorption Spectrophotometry, <i>Bunseki Kagaku</i> , 30: 209-214.
81YAS 01	A. Yasui, H. Koizumi, and C. Tsutsumi (1981) Determination of Calcium in Food Samples: Application of Adding Interference Suppressing Reagent-Atomic Absorption Spectrophotometric Method, <i>Bunseki Kagaku</i> , 30: T65-T71.
81YUZ 01	M. Yuzawa and N. Suzuki (1981) Substoichiometric Isotope Dilution Analysis of Calcium in Biological Material, <i>Journal of Radioanalytical Chemistry</i> , 62: 115-124.

CODE N	REFERENCE
81ZAU 01	G.-P. Zauke (1981) Cadmium in Gammaridae (Amphipoda:Crustacea) of the Rivers Werra and Weser: Geographical Variation and Correlation to Cadmium in Sediments, <i>Environmental Pollution</i> , 2: 465-474.
82AKA 01	J. Akashi, I. Fukushima, A. Imahori, and S. Shiobara (1982) Multielement Analysis of the Hair of Mining Industry Workers, <i>Journal of Radioanalytical Chemistry</i> , 68: 59-65.
82AND 01	Anonymous (1982) Elemental Analysis: Model 240C Elemental Analyzer, Perkin-Elmer Corporation, Norwalk, Conn.
82ATS 01	I. Atsuya and K. Itoh (1982) Direct Determination of Cadmium in the NBS Bovine Liver by Zeeman Atomic Absorption Spectrometry using the Graphite Miniature-cup, <i>Bunseki Kagaku</i> , 31: 713-717.
82ATS 02	I. Atsuya and K. Itoh (1982) Direct Determination of Lead in the NBS Bovine Liver by Zeeman Atomic Absorption Spectrometry using the Graphite Miniature-cup, <i>Bunseki Kagaku</i> , 31: 708-712.
82AZI 01	A. Aziz, J. A. C. Broekaert, and F. Leis (1982) Analysis of Microamounts of Biological Samples by Evaporation in a Graphite Furnace and Inductively Coupled Plasma Atomic Emission Spectroscopy, <i>Spectrochimica Acta</i> , 37B: 369-379.
82AZI 02	A. Aziz, J. A. C. Broekaert, and F. Leis (1982) A Contribution to the Analysis of Microamounts of Biological Samples using a Combination of Graphite Furnace and Microwave Induced Plasma Atomic Emission Spectroscopy, <i>Spectrochimica Acta</i> , 37B: 381-389.
82BAR 01	U. Bartels and T. T. Pham (1982) Spectrophotometric Determination of Sulphur in Plants using Schoniger Combustion and Dimethylsulphonazo III, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 31D: 13-15.
82BEN 01	H. Benard and M. Pinta (1982) Determination of Arsenic in Atmospheric Aerosols by Atomic Absorption with Electrothermal Atomization, <i>Atomic Spectroscopy</i> , 3: 8-12.
82BYR 01	A. R. Byrne (1982) Simultaneous Radiochemical Neutron Activation Analysis of Vanadium, Molybdenum, and Arsenic in Biological Samples, <i>Radiochemical and Radioanalytical Letters</i> , 52: 99-110.
82CAL D1	G. Calderoni and T. Ferri (1982) Determination of Tl at Subtrace Level in Rocks and Minerals by Coupling Differential Pulse Anodic Stripping Voltmetry with Suitable Enrichment Methods, <i>Talanta</i> , 29: 371-375.
82CHA 01	J. F. Chapman and L. S. Dale (1982) The Use of Alkaline Permanganate in the Preparation of Biological Materials for the Determination of Hg by Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 134: 379.
82CHR 01	J. K. Christensen, L. Kryger, and N. Bind (1982) The Determination of Traces of Cadmium, Lead, and Thallium in Fly Ash by Potentiometric Stripping Analysis, <i>Analytica Chimica Acta</i> , 141: 131-146.
82CLE 01	M. S. Clegg, C. Keen, B. Lonnerdal, and L. Hurley (1982) Analysis of Trace Elements in Animal Tissue: Determination of Manganese by Graphite Furnace Atomic Absorption Spectrophotometry, <i>Biological Trace Element Research</i> , 4: 145-156.

CODE N	REFERENCE	CODE N	REFERENCE
82COH 01	I. M. Cohen, S. M. Resnick, and G. B. Baro (1982) Activation Analysis of Thallium by $Tl-203(n,2n)Tl-202$ Reaction in Nuclear Reactors, Journal of Radioanalytical Chemistry, 72: 451-461.	82FLA 01	F. J. Flanagan, R. Moore, and P. J. Aruscavage (1982) Mercury in Geological Samples, Geostandards Newsletter, 6: 25-46.
82CON 01	C. P. Conrad, M. W. Rowe, and E. S. Gladney (1982) Comparative Determination of Uranium in Silicates by Delayed Neutron Activation Analysis, Geostandards Newsletter, 6: 1-4.	82GAJ 01	R. J. Gajan, S. Capar, C. Subjoc, and M. Sanders (1982) Determination of Lead and Cadmium in Foods by Anodic Stripping Voltammetry: I. Development of Method, Journal of the Association of Official Analytical Chemists, 65: 970.
82COR 01	E. Cortes, N. Gras, L. Munoz, and V. Cassorla (1982) A Study of Some Trace Elements in Infant Foods, Journal of Radioanalytical Chemistry, 69: 401-415.	82GLA 02	E. S. Gladney, O. Perrin, C. Burns, and R. Robinson (1982) Quality Assurance for Environmental Analytical Chemistry: 1981, Los Alamos National Laboratory report LA-9579-MS.
82CRO 01	J. G. Crock and F. E. Lichte (1982) Determination of Rare Earth Elements in Geological Materials by Inductively Coupled Argon Plasma/Atomic Emission Spectrometry, Analytical Chemistry, 54: 1329-1332.	82GOL 01	J. Goldberg and R. Sacks (1982) Direct Determination of Metallic Elements in Solid, Powder Samples with Electrically Vaporized Thin Film Atomic Emission Spectrometry, Analytical Chemistry, 54: 2179-2186.
82CRO 03	J. G. Crock and F. E. Lichte (1982) An Improved Method for the Determination of Trace Levels of Arsenic and Antimony in Geological Materials by Automated Hydride Generation Atomic Absorption Spectroscopy, Analytica Chimica Acta, 144: 223-233.	82GRA 01	C. Graham, M. Glascock, J. Carni, J. Vogt, and T. Spalding (1982), Determination of Elements in National Bureau of Standards' Geological Standard Reference Materials by Neutron Activation Analysis, Analytical Chemistry, 54: 1623.
82CUR 01	O. B. Curtis (1982) Private Communication, Group INC-7, Los Alamos National Laboratory, New Mexico.	82GRE 03	R. R. Greenberg and H. M. Kingston (1982) Simultaneous Determination of Twelve Trace Elements in Estuarine and Sea Water using Pre-irradiation Chromatogra- phy, Journal of Radioanalytical Chemistry, 71: 147-167.
82OAK 01	T. Oakabu and M. D. Swaine (1982) Calcium and Potassium Levels in Leaves Measured by X-ray Fluorescence Analysis, International Journal of Applied Radiation and Isotopes, 33: 193-196.	82GRI 01	A. P. Grimanis and G. D. Kania (1982) Rapid Determination of Mercury in Biological Materials by Radiochemical Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 72: 587-595.
82OAM 01	E. Oomsgaard, K. Ostergaard, and K. Heydorn (1982) Concentrations of Selenium and Zinc in Human Kidneys, Journal of Radioanalytical Chemistry, 70: 67-76.	82GRO 01	Z. Grobelski, R. Lehmann, R. Temm, and B. Welz (1982) Improvements in Graphite Furnace Atomic Absorption Microanalysis with Solid Sampling, Mikrochimica Acta (Wien), 1982: 115-125.
82DEM 01	D. R. Demers, D. A. Busch, and C. D. Allemand (1982) ICP Atomic Fluorescence Spectroscopy, American Laboratory, 14 (3): 167.	82GUP 02	J. G. Sen Gupta (1982) Flame and Graphite Furnace Atomic Absorption and Optical Emission Spectroscopic Determination of Yttrium and the Rare Earth Contents of Sixteen International Reference Samples of Rocks and Coal, Geostandards Newsletter, 6: 241.
82DOO 01	K. J. Doolan (1982) The Determination of Traces of Mercury in Solid Fuels by High Temperature Combustion and Cold-vapor Atomic Absorption Spectrometry, Analytica Chimica Acta, 140: 187-195.	82HAD 01	I. Hadzistelios and C. Papadopoulou (1982) Radiochemical Determination of Molybdenum in Biological Tissues by Ion Exchange, Journal of Radioanalytical Chemistry, 72: 597-607.
82EBD 01	L. Ebdon, J. R. Wilkinson, and K. W. Jackson (1982) Determination of Mercury in Coal by Non-oxidative Pyrolysis and Cold Vapor Atomic-Fluorescence Spectrometry, Analyst, 107: 269-275.	82HAH 01	M. H. Hahn, K. Wolnik, F. Fricke, and J. Caruso (1982) Hydride Generation/Condensation System with an Inductively Coupled Argon Plasma Polychromator for Determination of Arsenic, Bismuth, Germanium, Antimony, Selenium, and Tin in Foods, Analytical Chemistry, 54: 1048-1052.
82EBD 02	L. Ebdon and W. C. Pearce (1982) Direct Determination of Arsenic in Coal by Atomic Absorption Spectroscopy using Solid Sampling and Electrothermal Atomization, Analyst, 107: 942-950.	82HAM 01	E. P. Hamilton and A. Chatt (1982) Determination of Trace Elements in Atmospheric Wet Precipitation by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 71: 29-45.
82EHM 01	W. D. Ehmann, W. R. Marquesberry, and T. M. Hossain (1982) Trace Elements in Human Brain Tissue by INAA, Journal of Radioanalytical Chemistry, 70: 57-65.	82HAR 01	J. M. Harnly, J. S. Kane, and N. J. Miller-Ihli (1982) Effects of Air-Acetylene Flame Parameters on Simultaneous Multielement Atomic Absorption Spectrometry, Applied Spectroscopy, 36: 637-643.
82ELS 02	C. M. Elson, J. Milley, and A. Chatt (1982) Determination of Arsenic and Antimony in Geological Material and Natural Waters by Coprecipitation with Selenium and Neutron Activation-Gamma Spectrometry, Analytica Chimica Acta, 142: 269-275.	82HEI 01	H. Heinrichs and H. Keltsch (1982) Determination of Arsenic, Bismuth, Cadmium, Selenium, and Thallium by Atomic Absorption with a Volatilization Technique, Analytical Chemistry, 54: 1211-1214.
82EVA 01	W. H. Evans and D. Deller (1982) Evaluation of an Inductively Coupled Plasma Emission Direct-Reading Spectrometer for Multiple Trace Element Analysis of Foodstuffs, Analyst, 107: 977-992.		

CODE N	REFERENCE	CODE N	REFERENCE
82HEY 02	K. Heydorn and E. Oemsgaard (1982) Evaluation of Botanical Reference Materials for the Determination of Vanadium in Biological Samples, Journal of Radioanalytical Chemistry, 69: 131-146.	82KIM 01	T. Kimura, T. Ishimori, and T. Hamada (1982) Removal of Na-24 by a Chromatographic Extraction with a Kieselguhr Column and a Crown Ether Solution, Analytical Chemistry, 54: 1129-1131.
82HOE 01	M. Hoenig, C. Lima, and S. Dupire (1982) Validite des Determinations par Spectrometrie D'Absorption Atomique avec Atomisation Electrothermique du Cadmium, Cobalt, Chrome, Nickel et Plomb, Analisis, 10: 132-139.	82KIR 01	T. Kiriyma and R. Kuroda (1982) Combined Ion Exchange-Spectrophotometric Method for the Simultaneous Determination of Vanadium and Cobalt in Biological Materials, Analyst, 107: 505-510.
82HOE 02	M. Hoenig and P. van Hoeywegen (1982) Application de la SAA Electrothermique a L'Analyse des Matrices Complexes: Cas de L'Arsenic dans les Vegetaux Spectrochimica Acta, 37B: 817-828.	82KIR 02	T. Kiriyma and R. Kuroda (1982) Ion-Exchange Separation and Spectrophotometric Determination of Titanium in Biological Materials, Fresenius Zeitschrift fur Analytische Chemie, 313: 328-330.
82INU 01	T. Inui, S. Terada, H. Tamura, and N. Ichinose (1982) Determination of Se by Hydride Generation with Reducing Tube Followed by Graphite Furnace Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 311: 492-495.	82KIS 01	E. Kiss (1982) Determination of Silica in Geological Materials by Atomic Absorption Spectrometry, Analytica Chimica Acta, 140: 197.
82JAG 01	D. Jagner and K. Aren (1982) Flow Potentiometric Stripping Analysis for Mercury(II) in Urine, Sediment, and Acid Digest of Biological Material, Analytica Chimica Acta, 141: 157-162.	82KOI 01	S. R. Koirtyohann, M. Kaiser, and E. Kinderberger (1982) Food Analysis for Lead using Furnace Atomic Absorption and a Li'Vov Platform, Journal of the Association of Official Analytical Chemists, 65: 999-1003.
82JEN 01	O. R. Jenke and F. E. Diebold (1982) Characterization of Phosphorite Ores, Analytical Chemistry, 54: 1008-1011.	82KRA 01	M. Kralik (1982) Rb-Sr Age Determinations of Precambrian Carbonate Rocks of the Carpenterian McArthur Basin, Northern Territories, Australia, Precambrian Research, 18: 157-170.
82JEN 02	D. R. Jenke and R. Woodriff (1982) Application of the Woodriff Constant Temperature Graphite Furnace Atomizer to Atomic Spectroscopy, American Laboratory 14(8): 14-26.	82KRI 01	V. Krivan and M. Lang (1982) Radiotraceruntersuchungen zur Direkten Bestimmung von Kupfer in Biologischen Matrices durch Flammenlose AAS, Fresenius Zeitschrift fur Analytische Chemie, 312: 324-330.
82JEN 03	C. D. Jennings and T. M. Beasley (1982) Radiochemical Determination of Co-60 in Environmental Samples, Talanta, 29: 871-873.	82KUE 01	R. W. Kuennen, D. A. Wolnik, F. Fricke, and J. Caruso (1982) Pressure Dissolution and Real Sample Matrix Calibration for Multielement Analysis of Raw Agricultural Crops by Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 54: 2146-2150.
82JEN 05	D. R. Jenke and R. Woodriff (1982) Simultaneous Emission/Absorption Analysis in Constant Temperature Furnace Atomic Spectroscopy, Applied Spectroscopy, 36: 686-689.	82KUE 03	R. W. Kuennen, M. Hahn, F. Fricke, and K. Wolnik (1982) Hydride Generation and Condensation Flame Atomic Absorption Spectroscopic Determination of Antimony in Raw Coffee Beans and Processed Coffee, Journal of the Association of Official Analytical Chemists, 65: 1146-1148.
82JER 01	R. E. Jervis, K.-L. Ho, and B. Tieffenbach (1982) Trace Impurities in Canadian Oil-Sands, Coals, and Petroleum Products and Their Fate during Extraction, Up-Grading, and Combustion, Journal of Radioanalytical Chemistry, 71: 225.	82LAS 01	B. D. Lass, N. G. Roche, and A. O. Sanni (1982) Heavy Ion Activation Analysis, Journal of Radioanalytical Chemistry, 70: 251-272.
82JON 01	J. W. Jones, S. G. Caper, and T. C. O'Haver (1982) Critical Evaluation of a Multielement Scheme using Plasma Emission and Hydride Evolution Atomic Absorption Spectrometry for the Analysis of Plant and Animal Tissues, Analyst, 107: 353-377.	82LAU 01	J. C. Laul, E. A. Lepel, W. C. Weimer, and N. Wogman (1982) Precise Trace Rare Earth Analysis by Radiochemical Neutron Activation, Journal of Radioanalytical Chemistry, 69: 181.
82JUL 01	K. Julshamn, O. Ringdal, K. Slanning, and O. Braekkan (1982) Optimization of the Determination of Selenium in Marine Samples by Atomic Absorption Spectrometry: Comparison of a Flameless Graphite Furnace Absorption System with a Hydride Generation Atomic Absorption System, Spectrochimica Acta, 37B: 473-482.	82LEO 03	L. Leoni, M. Minichini, and M. Saitta (1982) Determination of Sulfur, Chlorine, and Fluorine in Silicate Rocks by X-ray Fluorescence Analysis, X-ray Spectrometry, 11: 156-158.
82KAM 01	E. Kamata, R. Nakashima, K. Goto, and S. Shibata (1982) Determination of Twelve Elements Including Major and Trace Elements in Coal with Flame Atomic Absorption Spectrometry, Bunseki Kagaku, 31: 551-556.	82LEU 01	P. C. Leung, K. S. Subramanian, and J. Meranger (1982) Determination of Arsenic in Polluted Waters by Differential Pulse Anodic Stripping Voltammetry, Talanta, 29: 515-518.
82KEE 01	J. A. Keenan and D. Holmes (1982) Quantitative Trace Analysis by X-ray Fluorescence using the Computer Program NRLXRF, Applied Spectroscopy, 36: 19-22.	82LIA 01	C. Liao (1982) Tellurium as Catalyst in Semimicro Kjeldahl Method for Total Nitrogen Determination, Journal of the Association of Official Analytical Chemists, 65: 786-790.

CODE N	REFERENCE
82LIN 01	S. M. Lin, C. H. Chiang, C. L. Tseng, and M. H. Yang (1982) Determination of Mercury Contents in Head Hair of Dentists by Instrumental Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 56: 261-272.
82LIN 03	P. C. Lindahl and A. M. Bishop (1982) Determination of Trace Elements in Coal by an Oxygen Bomb Combustion/Atomic Absorption Spectrophotometric Method, Fuel, 61: 658-662.
82LO 01	J. M. Lo, J. C. Wei, M. H. Yang, and S. J. Yeh (1982) Preconcentration of Hg with Lead Diethyldithiocarbamate for Neutron Activation Analysis of Biological and Environmental Samples, Journal of Radioanalytical Chemistry, 72: 571-585.
82LYO 01	D. J. Lyons and R. L. Roofayel (1982) Determination of Molybdenum in Plant Material using Inductively Coupled Plasma Emission Spectroscopy, Analyst, 107: 331-334.
82MAT 01	K. Matsumoto and K. Fuwa (1982) Molecular Emission Spectrometry with Hydride Generation for Determination of Subnanogram Amounts of Arsenic, Analytical Chemistry, 54: 2012-2015.
82MAT 02	K. Matsumoto, M. Nishio, Y. Misaki, and K. Terada (1982) Decomposition of Tin(IV) Oxide, Antimony(III) Oxide, and Bismuth(III) Oxide by Fusion with Ammonium Iodide and its Application for Analysis of Environmental Samples, Bunseki Kagaku, 31: 141-145.
82MAT 04	K. Matsumoto, Y. Misaki, K. Hayashi, and K. Terada (1982) Decomposition of Titanium Dioxide and Zirconium Dioxide by Fusion with Ammonium Hydrogen Sulfate, Fresenius Zeitschrift fur Analytische Chemie, 312: 542-543.
82MAY 01	T. W. May (1982) Recovery of Endogenous Selenium from Fish Tissue by Open System Dry Ashing, Journal of the Association of Official Analytical Chemists, 65: 1040-1145.
82MCG 01	J. A. McGynn and T. D. Rice (1982) Proceedings of a Symposium on Characteristics of Australian Coals and their Consequences for Utilization, CSIRO Division of Fossil Fuels, Sydney; taken from 85CLA 02.
82MIL 01	J. C. Mills, K. Turner, P. Roller, and C. Belcher (1982) Direct Determination of Trace Elements in Coal: Wavelength Dispersive X-ray Spectrometry With Matrix Correction using Compton Scattered Radiation, X-ray Spectrometry, 10: 131-137
82MOR 01	J. Mortatti, F. Krug, L. Pessenda, and E. Zagatto (1982) Determination of Iron in Natural Waters and Plant Material with 1,10-Phenanthroline by Flow Injection Analysis, Analyst 107: 659-663.
82MOR 02	J. S. Morris, M. F. Smith, and R. E. Morrow (1982) INAA Determination of Selenium via Se-77m in Plasma, Semen, and Hair Samples from Beef and Dairy Bulls, Journal of Radioanalytical Chemistry, 69: 473-494.
82MUR 01	R. S. S. Murthy and D. E. Ryan (1982) Rapid Neutron Activation Analysis of Biological Samples after Removal of Sodium on Kryptofix 221B Polymer, Analytica Chimica Acta, 144: 107-114.
82NAD 01	R. A. Nadkarni (1982) Applications of Hydride Generation-Atomic Absorption Spectrometry to Coal Analysis, Analytica Chimica Acta, 135: 363-368.

CODE N	REFERENCE
82NAD 02	R. A. Nadkarni, R. I. Botto, and S. E. Smith (1982) Comparison of Two Atomic Spectroscopic Methods for Elemental Analysis of Geological Materials, Atomic Spectroscopy, 3: 180-184.
82NYG 01	D. D. Nygaard and J. H. Lowry (1982) Sample Digestion Procedures for Simultaneous Determination of As, Sb, and Se by Inductively Coupled Argon Plasma Emission Spectrometry with Hydride Generation, Analytical Chemistry, 54: 803-807.
82OMA 01	M. Omar and H. J. M. Bowen (1982) Pre-concentration of Environmental Tin and its Determination using Catechol Violet, Analyst, 107: 654-658.
82OWE 01	J. W. Owens, E. S. Gladney, and D. Knab (1982) Determination of Boron in Geological Materials by Inductively Coupled Plasma Emission Spectrometry, Analytica Chimica Acta, 135: 169-172.
82PEL 01	P. A. Pella and J. R. Sieber (1982) Intercomparison of Selected Semi-empirical and Fundamental Parameter Interelement Correction Methods in X-ray Spectrometry, X-ray Spectrometry, 11: 167-169.
82PER 02	G. Pershagen, B. Lind, and N.-E. Bjorklund (1982) Lung Retention and Toxicity of Some Inorganic Arsenic Compounds, Environmental Research, 29: 425-434.
82POL 01	H. Polkowska-Motrenko, M. Dermelj, and A. R. Byrne (1982) Radiochemical Neutron Activation Analysis of Selenium using Carbamate Extraction, Radiochemical and Radioanalytical Letters, 53: 319-328.
82PRE 01	J. R. Preer, B. R. Stephens, and C. W. Bland (1982) Sample Preparation in Determination of Lead in Garden Vegetables by Flame Atomic Absorption Spectrophotometry, Journal of the Association of Official Analytical Chemists, 65: 1010-1014.
82QUR 01	I. H. Qureshi, M. S. Chaudhary, and S. Ahmad (1982) Trace Element Concentration in Head Hair of the Inhabitants of the Rawalpindi-Islamabad Area, Journal of Radioanalytical Chemistry, 68: 209-218.
82RAI 01	T. C. Rains, T. A. Rush, and T. A. Butler (1982) Innovations in Atomic Absorption Spectrophotometry with Electrothermal Atomization for Determining Lead in Foods, Journal of the Association of Official Analytical Chemists, 65: 994-999.
82RIT 01	C. J. Ritter (1982) The Dry-ashing Method of Preparing Sewage Sludge for Cd and Pb Determinations by AAS, American Laboratory, 14(8): 72-73.
82ROD 03	M. Rodriguez-Flores and E. Rodriguez-Castellon (1982) Lead and Cadmium Levels in Soil and Plants near Highways and Their Correlation with Traffic Density, Environmental Pollution, 48: 281-290.
82ROE 01	K. K. Roe, W. Burnett, K. Kim, and M. Beers (1982) Excess Protactinium in Phosphate Nodules from a Coastal Upwelling Zone, Earth and Planetary Science Letters, 60: 39-46.
82ROE 02	I. Roelandts, G. Robaye, G. Weber, and J. Delbrouck (1982) Non-destructive Determination of Bromine in Blood Serum Samples using Proton Induced X-ray Emission Spectrometry, Radiochemical and Radioanalytical Letters, 50: 319-332.

CODE N	REFERENCE
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- 82SAK 01 M. Sakata and O. Shimoda (1982)  
Atomic Absorption Determination of Heavy Metals in Sediment by Digestion Method using Teflon-lined Bomb, Bunseki Kagaku, 31: T81-T86.
- 82SAR 01 R. C. Sarkar and M. S. Das (1982)  
Differential Spectrophotometric Determination of Silica in Rocks as Alpha-Molybdisilicic Acid in Presence of Phosphate and Other Interferences, Analytica Chimica Acta, 134: 401.
- 82SAT 01 T. Sato and T. Kato (1982)  
Estimates of Iodine in Biological Materials by Epithermal Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 68: 175-180.
- 82SAT 02 R. D. Satzger, C. Clow, E. Bonnin, and F. Fricke (1982)  
Determination of Background Levels of Lead and Cadmium in Raw Agricultural Crops by using Differential Pulse Anodic Stripping Voltammetry, Journal of the Association of Official Analytical Chemists, 65: 987-991.
- 82SCH 01 P. Schramel and X. Li-Qiang (1982)  
Determination of Be in the PPB Range in Three Standard Reference Materials by Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 54: 1333-1336.
- 82SCH 03 A. A. Schilt and M. R. di Tuse (1982)  
Spectrophotometric Determination of Iron and Reducing Agents with PPTS, A New Water-soluble Ferroin-type Chromogen of Superior Sensitivity, Talanta, 29: 129-132.
- 82SCH 04 P. Schramel, X. Li-Qiang, A. Wolf, and S. Hasse (1982)  
ICP-Emissionspektroskopie: Ein Analytisches Verfahren zur Klarschlamm und Bodenüberwachung in der Routine, Fresenius Zeitschrift fur Analytische Chemie, 313: 213-216.
- 82SCH 05 J. O. Schmidt, L. Palgaard, and J. Westermann (1982)  
Determination of Boron by Fast Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 72: 425-436.
- 82SEG 01 C. Segebade, M. Kuhl, B. Schmitt, and R. Heider (1982)  
Some Remarks on the State of Photon Activation Analysis and the Use of Internal Standards, Journal of Radioanalytical Chemistry, 72: 665-696.
- 82SIN 01 S. A. Sinex and G. R. Helz (1982)  
Entrapment of Zinc and Other Trace Elements in a Rapidly Flushed Industrialized Harbor, Environmental Science and Technology, 16: 820-825.
- 82SMI 01 D. H. Smith, J. Walton, H. McKown, and R. Walker (1982)  
A Mobile Mass Spectrometry Laboratory for Isotopic Ratio Measurements of Uranium and Plutonium, Analytica Chimica Acta, 142: 355-359.
- 82SUB 01 K. S. Subramanian and J. C. Meranger (1982)  
Rapid Hydride Evolution-Electrothermal Atomisation Atomic Absorption Spectrophotometric Method for Determining Arsenic and Selenium in Human Kidney and Liver, Analyst, 107: 157.
- 82SUL 01 J. R. Sullivan and J. J. Delfino (1982)  
Determination of Mercury in Fish, Journal of Environmental Science and Health, A17: 265-275.
- 82SUZ 01 M. Suzuki and K. Ohta (1982)  
Reduction of Interferences with Thiourea in the Determination of Cadmium by Electrothermal Atomic Absorption Spectrophotometry, Analytical Chemistry, 54: 1686-1689.

CODE N	REFERENCE
82SUZ 02	S. Suzuki and S. Hirai (1982) Determination of Trace Elements in Coal and Fly Ash by Neutron Activation Analysis, Bunseki Kagaku, 31: 443-449.
82SUZ 03	K. Suzuki and K. Ohta (1982) Determination of Strontium in Biological Samples by Atomic Emission Spectrometry with Electrothermal Atomization, Fresenius Zeitschrift fur Analytische Chemie, 313: 34-37.
82TAM 01	G. Tam and G. LaCroix (1982) Dry Ashing, Hydride Generation Atomic Absorption Spectrometric Determination of As and Se in Foods, Journal of the Association of Official Analytical Chemists, 65: 647-651.
82TER 01	S. Terashima (1982) Determination of Trace Amounts of Tin in Seventy-Three Geochemical Reference Samples by Atomic Absorption Spectrometry, Geostandards Newsletter, 6: 77-81.
82TER 02	S. Terashima (1982) Determination of Trace Amounts of Beryllium in Geological Samples by Solvent Extraction and Atomic Absorption Spectrometry, Bunseki Kagaku, 31: 727-729.
82TER 03	R. Tertian and F. Claisse (1982) Principles of Quantitative X-ray Fluorescence Analysis, Heyden, London.
82THO 02	J. Thomson (1982) A Total Dissolution Method for Determination of the Alpha Emitting Isotopes of Uranium and Thorium in Deep-sea Sediments, Analytica Chimica Acta, 142: 259-268.
82TIN 01	B. Ting, J. Pagoures, and M. Jenghorbani (1982) Radiochemical Neutron Activation Analysis of Stable Isotopes in Relation to Human Mineral Nutrition, Journal of Radioanalytical Chemistry, 70: 133-144.
82UCH 02	H. Uchikawa, R. Furuta, and Y. Mihara (1982) The Determination of Trace Mercury in Solid Fuel by Atomic Absorption Spectrometry, Bunseki Kagaku, 31: 367-372.
82VAN 01	C. Vanoeteren, R. Cornelis, J. Versieck, and J. Hoste (1982) Trace Element Patterns in Human Lung Tissues, Journal of Radioanalytical Chemistry, 70: 219-238.
82VER 03	M. Verlinden (1982) On the Acid Decomposition of Human Blood and Plasma for the Determination of Selenium, Talanta, 29: 875-882.
82VIS 01	P. Viswanadham, D. Smick, F. Pisney, and W. Dilworth (1982) Comparison of Ion Chromatography and Titrimetry for Determination of Sulfur in Fuel Oils, Analytical Chemistry, 54: 2431-2433.
82VOG 01	J. R. Vogt, C. Graham, M. Glascock, and R. Cobean (1982) A Study of Mesoamerican Obsidian Sources using Activation Analysis, Journal of Radioanalytical Chemistry, 69: 271-289.
82WEI 01	A. Weitz, G. Fuchs, and K. Bachmann (1982) AAS-Bestimmung von Cadmium und Blei in Biologischen Proben und Bodenproben nach Abtrennung durch Verfluchtigung, Fresenius Zeitschrift fur Analytische Chemie, 313: 38-42.
82WIL 01	J. R. Wilkinson, L. Ebdon, and K. W. Jackson (1982) Determination of Volatile Trace Metals in Coal by Analytical Atomic Spectroscopy, Analytical Proceedings of the Royal Society of Chemistry (London), 19: 305-307.

CODE N	REFERENCE	CODE N	REFERENCE
82WIL 02	S. A. Wilson and C. A. Gent (1982) The Determination of Fluoride in Geologic Samples by Ion Chromatography, Analytical Letters, 15: 851-864.	83BET 02	M. Bettinelli (1983) Determination of Fluorine in Environmental Standard Reference Materials with a Fluoride Ion-selective Electrode, Analyst, 108: 404-407.
82WIL 04	E. V. Williams (1982) Low-temperature Oxygen-Fluorine Radiofrequency Ashing of Biological Materials in Teflon Dishes prior to the Determination of Sn, Fe, Pb, and Cr by AAS, Analyst, 107: 1006-1013.	83BIR 01	J. R. Bird and E. Clayton (1983) The PIGME Method for Fluorine Determination, Nuclear Instruments and Methods in Physics Research, 218: 525-528.
82YAM 01	T. Yamashige, H. Ida, M. Yamamoto, Y. Shigetomi, and Y. Yamamoto (1982), Comparison of Acid Digestion Methods with and without Hydrofluoric Acid for the Determination of Fe, Mn, Zn, Pb, Cd, and Ni in Ambient Particulates by Atomic Absorption Spectrometry, Bunseki Kagaku, 32: 169-173.	83BLO 01	N. Bloom (1983) Determination of Silver in Marine Sediments by Zeeman Corrected Graphite Furnace Atomic Absorption Spectroscopy, Atomic Spectroscopy, 4: 204-207.
82ZEL 01	R. Zeisler and R. R. Greenberg (1982) Ultratrace Determination of Platinum in Biological Materials Via Neutron Activation and Radiochemical Separation, Journal of Radioanalytical Chemistry, 75: 27-37.	83BOU 01	P. Bourbon, J. Esclassan, and J. Vandaele (1983) Determination de Traces de Molybdène par Polarographie Impulsionnelle du Complexe Hydroxyquinoléine-Molybdène, Analisis, 11: 341-344.
83ADE 01	S. Adelolu, A. Bond, M. Briggs, and H. Hughes (1983) Stripping Voltammetric Determination of Selenium in Biological Materials by Direct Calibration, Analytical Chemistry, 55: 2076-2082.	83BOY 01	W. V. Boynton and D. H. Hill (1983) Composition of Bulk Samples and a Possible Pristine Clast from Allan Hills A81005, Geophysical Research Letters, 10: 837-840.
83AHM 01	S. Ahmad, M. Chaudhary, A. Mannan, and I. Qureshi (1983) Determination of Toxic Elements in Tea Leaves by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 78: 375-383.	83BPN 01	Battelle Pacific Northwest Laboratories (1983) Private Communication, taken from 83LUT 01.
83AHM 02	R. bin Ahmad, J. O. Hill, and R. J. Magee (1983) Direct Determination of Selenium(IV) in Biological Samples by Cathodic Stripping Voltammetry, Analyst, 108: 835-839.	83BRA 01	A. Brandone, P. A. Borroni, and N. Genova (1983) Determination of Arsenic, Cadmium, and Mercury in Biological Samples by Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 57: 83-94.
83ALL 01	M. Allegrini, R. Delfanti, M. di Cassa, and E. Orvini (1983) Determination of Iodine in Biological Matrices using a Fast Radiochemical Separation, Radiochemical and Radioanalytical Letters, 59: 163-170.	83BRA 02	P. Bratter, K. P. Berthold, and P. E. Gardiner (1983) The Use of Reference Materials as Standards in the Simultaneous Multielement Analysis of Biological Materials using Inductively Coupled Plasma Spectrometry, Spectrochimica Acta, 38B: 221-228.
83AND 01	D. L. Anderson, G. E. Gordon, W. B. Walters, W. H. Zoller, and R. M. Lindstrom (1983), Neutron-capture Prompt Gamma-ray Activation Analysis, in 83SHO 01, pp. 159-164.	83BRO 01	A. Broekman and J. G. van Raaphorst (1983) Stable Isotope Dilution Analysis by Thermal Ionization Mass Spectrometry, Fresenius Zeitschrift für Analytische Chemie, 315: 30-33.
83AND 02	J. R. Anderson (1983) Petrology of a Portion of the Eastern Penninsular Ranges Mylonite Zone, Southern California, Contributions to Mineralogy and Petrology, 84: 253-271.	83BRO 02	R. J. Brown (1983) Determination of Trace Metals in Petroleum and Petroleum Products using an Inductively Coupled Plasma Optical Emission Spectrometer, Spectrochimica Acta, 38B: 283-289.
83ATS 01	I. Atsuya and K. Itoh (1983) The Use of an Inner Miniature Cup for Direct Determination of Powdered Biological Samples by Atomic Absorption Spectrometry, Spectrochimica Acta, 38B: 1259-1264.	83BYR 01	R. E. Byrne (1983) A Rapid Method for the Determination of Arsenic, Cadmium, Copper, Lead, and Zinc in Airborne Particulates by Flame Atomic Absorption Spectrometry, Analytica Chimica Acta, 151: 187-194.
83BAL 01	A. M. E. Balaes and J. J. Jacobs (1983) The Installation and Commissioning of a Siemens SRS200 Sequential X-ray Fluorescence Spectrometer, Mintek report no. M80.	83CAR 01	G. Carvajal, D. Mahan, D. Goforth, and D. Leyden (1983) Evaluation of Methods based on Acid Extraction and Atomic Absorption Spectrometry for Multielement Determinations in River Sediments, Analytica Chimica Acta, 147: 133-150.
83BAR 02	R. M. Barnes and H. S. Mahanti (1983) Analysis of Bauxite by Inductively Coupled Plasma Atomic Emission Spectroscopy, Spectrochimica Acta, 38B: 193-197.	83CAR 02	E. E. Cary and M. Rutzke (1983) Electrothermal Atomic Absorption Spectroscopic Determination of Chromium in Plant Tissues, Journal of the Association of Official Analytical Chemists, 66: 850-852.
83BER 01	C. Berthelot, H. Eschbach, V. Verdingh, and F. Verheyen (1983), The Homogeneity Control of Reference Materials by Photon Activation, International Journal of Environmental Analytical Chemistry, 16: 227-236.	83CHA 01	D. Chase (1983) Written Communication of Background Information from an American Laboratory Article, Instrumentation Laboratory, Andover, Massachusetts.
83BET 01	M. Bettinelli (1983) Fusion Procedure for the Trace Metal Analysis of Coal by Atomic Absorption, Atomic Spectrometry, 4: 5-9.		

CODE N	REFERENCE	CODE N	REFERENCE
83CHA 02 C. Chan (1983)	Semiautomated Determination of Fluoride in Rocks, American Laboratory, 15(10): 32-41.	83GAR 01 M. F. Garbauskas and J. Wong (1983)	XRF Analysis of Trace Titanium in Coal Using Fundamental Parameters, X-ray Spectrometry, 12: 118-120.
83CLA 01 R. N. Clayton and T. K. Mayede (1983)	Oxygen Isotopes in Euclites, Shergottites, Nakhrites, and Chassignites, Earth and Planetary Science Letters, 62: 1-6.	83GOG 01 R. Goguel (1983)	Improved Background Correction in the Analysis of Cadmium by Flame Atomic Absorption, Geostandards Newsletter, 7: 341-344
83CRO 01 J. G. Crock, F. E. Lichte, and P. H. Briggs (1983)	Determination of Elements in NBS' Geological Reference Materials SRM 278 and SRM 688 by Inductively Coupled Argon Plasma Atomic Emission Spectrometry, Geostandards Newsletter 7: 335-340.	83GRE 01 R. R. Greenberg and H. M. Kingston (1983)	Trace Element Analysis of Natural Water Samples by Neutron Activation Analysis with Chelating Resin, Analytical Chemistry, 55: 1160-1165.
83DAN 01 H. S. Dang, H. Desai, D. Jaiswal, S. Kayasth, and S. Somasundaram (1983), A Sequential Multielement Separation Scheme for Determination of As, Mn, Mo, Cu, and Zn in Human Milk by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 77: 65-70.		83GRE 02 R. R. Greenberg (1983)	Improved Radiochemical Procedures for High Sensitivity Measurements of Ultratrace Concentrations of Tin and Mercury in 83SHO 01, pp. 140-141.
83DEL 01 D. Dellar (1983)	Evaluation of the Determination of High Levels of Total Cadmium in Foodstuffs using Flame Atomic Absorption Spectrophotometric Measurement, Analyst, 108: 759-763.	83GRO 02 Z. Grobanski, D. Weber, B. Helz, and J. Wolff (1983)	Determination of Cesium and Rubidium by Flame and Furnace Atomic Absorption Spectrometry, Analyst, 108: 925-932.
83DOU 01 D. J. Douglas, E. S. Quan, and R. G. Smith (1983)	Elemental Analysis with an Atmospheric Pressure Plasma (MPIP, ICP)/Quadrupole Mass Spectrometer System, Spectrochimica Acta, 38B: 39-48.	83GUN 01 M. F. Guns (1983)	La Determination du Soufre Total Dans les Vegetaux par Fluorescence des Rayons X, Analisis, 11: 295-298.
83DOU 02 D. Douglas, G. Rosenblatt, and E. Quan (1983)	Inductively Coupled Plasma/Mass Spectrometry -- A New Technique for Trace Element Analysis, Trace Substances in Environmental Health, 17: 385-390.	83HER 01 J. A. Hern, G. K. Rutherford, and G. W. van Loon (1983)	Determination of Chloride, Nitrate, Sulfate, and Total Sulfur in Environmental Samples by Single-column Ion Chromatography, Talanta, 30: 677-682.
83ELA 01 A. El-Ahraf, W. V. Willis, and F. Moses (1983)	Determination of the Concentration of Metals in Animal Feeds: Cd, Cr, Cu, Fe, Mg, Ni, Pb, and Zn in Dairy Cattle Feed, Manure, and Processed Manure, Biological Trace Element Research, 5: 129-137.	83HOE 01 M. Hoenig and P. van Hoeywegen (1983)	Effect de L'Acide Ascorbique sur la Determination du Plomb dans des Metries Vegetales par ETA-AAS, Spectrochimica Acta 38B: 1179-1182.
83ELK 01 E. A. Elkhatab, O. L. Bennet, and R. J. Wright (1983)	Determination of Total Arsenic in Soil by Differential Pulse Polarography, Soil Science Society of America Journal, 47: 836-838.	83HOF 01 D. Hoffer, I. B. Brenner, and L. Halicz (1983)	Application of a Low Power Ar ICP for the Analysis of Major and Minor Elements in Phosphate Rocks, Geological Survey of Israel, Geochemistry Division (Jerusalem), Report No. 12.
83EPS 01 M. S. Epstein (1983)	Determination of Ultratrace Levels of Lead in Reference Fuels by Graphite Furnace Atomic Absorption, Atomic Spectrometry, 4: 62-63.	83HOL 01 W. Holak (1983)	Determination of Copper, Nickel, and Chromium in Foods, Journal of the Association of Official Analytical Chemists, 66: 620-622.
83ESA 01 S. Esala, E. Vuori, and L. Niinisto (1983)	Determination of Nanogram Amounts of Fluorine in Breast Milk by Ashing-diffusion Method and the Fluoride Electrode, Mikrochimica Acta [Wien], 1983I: 155-165.	83HSU 01 C.-G. Hsu and D. C. Locke (1983)	Digestion Methods for Determination of Cadmium and Lead in Organic and Silica-rich sediments, Analytica Chimica Acta, 153: 313-318.
83FAG 01 F. Fagioli and S. Landi (1983)	Evaluation of a New Method for the Determination of Elements in Vegetable Foods and Feeds by Atomic Absorption Spectroscopy with Sampling of Carbonaceous Slurry, Analytical Letters, 16: 1435-1447.	83ICH 01 S. Ichinoki, M. Yamazaki, and T. Morita (1983)	Simultaneous Determination of Lead, Nickel, and Copper in Orchard Leaves by High Performance Liquid Chromatography Followed by Solvent Extraction, Bunseki Kagaku, 32: 285-287.
83FAR 01 J. G. Farmer and M. J. Gibson (1983)	Erratum to Direct Determination of Cadmium, Chromium, Copper, and Lead in Siliceous Standard Reference Materials, Atomic Spectrometry, 4: 112.	83JAC 01 J. S. Jacobson (1983)	Written Communication, Boyce Thompson Institute for Plant Research, Cornell University, Ithaca, New York.
83FRA 01 A. Frank and L. R. Petersson (1983)	Selection of Operating Conditions and Analytical Procedure in Multi-metal Analysis of Animal Tissues by D.C. Plasma Atomic Emission Spectroscopy, Spectrochimica Acta, 38B: 207.	83JEN 01 D. R. Jenke and R. Woodriff (1983)	Continued Development of Direct Aerosol Introduction in Constant Temperature Furnace Atomic Absorption Spectroscopy, Applied Spectroscopy, 37: 470-472.
		83JER 01 R. E. Jervis, S. Landsberger, S. Aufreiter, J. van Loon, R. Lecomte, and S. Monaro (1983), Trace Elements in Wet Atmospheric Deposition: Application and Comparison of PIXE, INAA, and Graphite-Furnace AAS Techniques, International Journal of Environmental Analytical Chemistry, 15: 89-106.	

CODE N	REFERENCE	CODE N	REFERENCE
83KAT 01	M. Katoh and K. Kudo (1983) Substoichiometric Determination of Lanthanum by using EOTA and 8-Hydroxyquinoline, <i>Journal of Radioanalytical Chemistry</i> 79: 23-34.	83LOS 01	R. D. Loss, K. J. R. Rosman, and J. R. de Laeter (1983) Ag, Te, and Pd in 17 Geochemical Reference Materials by Mass Spectrometric Isotope Dilution Analysis, <i>Geostandards Newsletter</i> , 7: 321-324.
83KAT 02	T. Katami, T. Hayakawa, M. Furukawa, and S. Shibata (1983) Extraction and Spectrophotometric Determination of Cobalt in Coal Fly Ash using 2-[2-(3,5-Dibromopyridyl)azo]-5-dimethylaminobenzoic Acid, <i>Analyst</i> , 108: 864-869.	83LOV 01	M. A. Lovell and J. G. Farmer (1983) The Determination of Arsenic in Soil and Sediment Digests by Graphite Furnace Atomic Absorption Spectrometry, <i>International Journal of Environmental Analytical Chemistry</i> , 14: 181-192.
83KEI 01	J. P. Keilsohn, R. D. Deutsch, and G. W. Hieftje (1983) The Use of a Microarc Atomizer for Sample Introduction into an Inductively Coupled Plasma, <i>Applied Spectroscopy</i> , 37: 101	83LUT 01	G. J. Lutz (1983) I-129 Analysis, in 83SHO 01, pp. 142-143.
83KEL 01	W. R. Kelley and J. D. Fassett (1983) Determination of Picogram Quantities of Uranium in Biological Tissues by Isotope Dilution Thermal Ionization Mass Spectrometry with Ion Counting Detection, <i>Analytical Chemistry</i> , 55: 1040-1044.	83MAD 01	P. P. Madsen, I. Drabæk, and J. Sorensen (1983) The Determination of Copper and Lead in Sediments by Potentiometric Stripping Analysis, <i>Analytica Chimica Acta</i> , 151: 479-482.
83KEN 04	W. T. Kennedy, W. B. Hubbard, and J. G. Tarter (1983) Rapid Analysis of Fluorine in Geological Samples with Ion Chromatographic Detection, <i>Analytical Letters</i> , 16: 1133-1148.	83MAH 01	W. A. Maher (1983) A Decomposition Procedure for the Determination of Arsenic in Marine Samples, <i>Talanta</i> , 30: 534-536.
83KIM 01	K. H. Kim and W. C. Burnett (1983) Gamma-ray Spectrometric Determination of Uranium-series Nuclides in Marine Phosphorites, <i>Analytical Chemistry</i> , 55: 1796-1800.	83MAH 03	K. I. Mahan and D. E. Leyden (1983) Simultaneous Determination of Sixteen Major and Minor Elements in River Sediments by Energy-dispersive X-ray Fluorescence Spectrometry after Fusion in Lithium Tetraborate Glass, <i>Analytica Chimica Acta</i> , 147: 123-131.
83KNA 01	D. Knab (1983) Written Communication, Los Alamos National Laboratory, New Mexico.	83MAH 04	W. A. Maher (1983) Spectrophotometric Determination of Arsenic in Biological Tissues and Sediments after Digestion with Nitric, Sulfuric, and Perchloric Acids and Pre-concentration by Zinc Column Arsine Generation and Trapping, <i>Analyst</i> , 108: 939-943.
83KOH 01	T.-S. Koh and T. H. Benson (1983) Metals and Other Elements: Critical Re-appraisal of Fluorometric Method for Determination of Selenium in Biological Materials, <i>Journal of the Association of Official Analytical Chemists</i> , 66: 918-925.	83MAH 05	H. S. Mahanti and R. M. Barnes (1983) Determination of Trace Elements in Coal and Other Energy Related Materials by Inductively Coupled Plasma Emission Spectrometry after Collection on a Poly(dithiocarbamate) Resin, <i>Analytica Chimica Acta</i> , 149: 395-400.
83KOL 01	H. W. Kolmer and S. E. Raptis (1983) Selenium Content of Geochemical Reference Samples Determined by a Simple Method at the ng/g Level, <i>Geostandards Newsletter</i> , 7: 315-318.	83MAR 03	Y. Maruyama and Y. Nagaoka (1983) Determination of Arsenic in Biological Materials using Ammonium Molybdate Labeled with Mo-99, <i>Journal of Radioanalytical Chemistry</i> , 76: 81-85.
83KUM 01	I. Kumamaru, H. Matsuo, and M. Ikeda (1983) Effect of Continuous Prereduction by Heating with Potassium Iodide and Hydrochloric Acid for Determining Arsenic (III, V) by the Continuous Hydride Generation-Atomic Absorption Spectrometry using Sodium Tetrahydroborate Reduction, <i>Bunseki Kagaku</i> , 32: 357-361.	83MAR 04	J. Marshall, D. Littlejohn, J. Ottaway, J. Harnly, N. Miller-Ihlí, and T. C. O'Haver (1983), Simultaneous Multielement Analysis by Carbon Furnace Atomic Emission Spectrometry, <i>Analyst</i> , 108: 178-188.
83LI 01	M. Li and R. H. Filby (1983) Determination of Sulfur in Fly Ash and Fuel Oil Standard Reference Materials by Radiochemical Neutron Activation Analysis and Liquid Scintillation Counting, <i>Analytical Chemistry</i> , 55: 2336-2340.	83MAR 05	R. W. Marts and J. J. Blaha (1983) Mixed Acid Solubilization Procedure for Determination of Total Mercury in Food Samples, <i>Journal of the Association of Official Analytical Chemists</i> , 66: 1421-1423.
83LIN 01	R. M. Lindstrom (1983) Internal NBS Communication, taken from 83GRE 01.	83MAS 02	K. Masumoto and M. Yagi (1983) Charged Particle Activation Analysis of Phosphorus in Biological Materials, <i>Journal of Radioanalytical Chemistry</i> , 78: 233-239.
83LIN 02	R. M. Lindstrom, R. R. Greenberg, and R. F. Fleming (1983) Multielement Analysis of Coal Standard Reference Materials, in 83SHO 01, pp. 147-148.	83MAT 02	I. Matsubara (1983) Determination of Trace of Molybdenum in Biological Materials by a Combined Ion Exchange-Spectrophotometric Method, <i>Bunseki Kagaku</i> , 32: 797-799.
83LIP 01	H. J. Lippolt, H. Schleicher, and I. Raczek (1983) Rb-Sr Systematics of Permian Volcanites in the Schwarzwald (SW-Germany): Part I. Space of Time Between Plutonism and Late Orogenic Volcanism, <i>Contributions to Mineralogy and Petrology</i> , 84: 272-280.	83MCC 02	J. T. McCaffrey, M.-L. W. Wu, and R. G. Michel (1983) Discrimination Against Atomic-emission Spectral Interferences in Wavelength-modulated Continuum Source Excited Flame Atomic-fluorescence Spectrometry, <i>Analyst</i> , 108: 1195-1208.

CODE N	REFERENCE
83MIL 01	J. C. Mills (1983) Determination of Boron, Beryllium, and Lithium in Coal Ash and Geological Materials by Spark Optical Emission Spectrometry, <i>Analytica Chimica Acta</i> , 154: 227-234.
83NAD 01	R. A. Nedkarni and D. M. Pond (1983) Applications of Ion Chromatography for Determination of Selected Elements in Coal and Oil Shale, <i>Analytica Chimica Acta</i> , 146: 261-266.
83NDI 01	C. L. Ndiokwere, V. P. Guinn, and D. Burtner (1983) Trace Elemental Composition of Nigerian Coals Measured by Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 79: 123-128.
83NOR 01	J. D. Norman, L. Stumpe, J. Trimm, and F. Johnson (1983) Argon Plasma Emission Spectrometry of Uranium in Phosphatic Materials, <i>Journal of the Association of Official Analytical Chemists</i> , 66: 949-951.
83OBR 01	I. Obrusnik and S. Posta (1983) Instrumental Neutron Activation Analysis of NBS 1633A Fly Ash and 1632A Bituminous Coal Reference Samples with the use of Short Irradiations, <i>Geostandards Newsletter</i> , 7: 291-293.
83OHM 01	T. Ohmori (1983) Spectrophotometric Determination of a Small Amount of Aluminium with Stilbazo and Zephiramine in Alkaline Solution; Determination of Aluminium in Standard Rocks and Cement, <i>Bunseki Kagaku</i> , 32: 485-487.
83OLI 01	E. de Oliveira, J. W. McLaren, and S. S. Berman (1983) Simultaneous Determination of Arsenic, Antimony, and Selenium in Marine Samples by Inductively Coupled Plasma Atomic Emission Spectrometry, <i>Analytical Chemistry</i> , 55: 2047.
83OLS 02	G. J. Olson, F. E. Brinckman, and J. A. Jackson (1983) Purge and Trap Flame Photometric Gas Chromatography Technique for the Speciation of Trace Organotin and Organosulfur Compounds in Human Urine Standard Reference Material, <i>International Journal of Environmental Analytical Chemistry</i> , 15: 249-261.
83PEL 01	P. A. Pella, H. Kingston, J. Sleber, and L.-Y. Feng (1983) Effect of Sample Dissolution Procedures on X-ray Spectrometric Analysis of Biological Materials, <i>Analytical Chemistry</i> , 55: 1193-1194.
83PRU 01	E. Pruszkowska, P. Barrett, R. Ediger, and G. Wallace (1983) Determination of Arsenic and Selenium using Hydride System Combined with ICP, <i>Atomic Spectroscopy</i> , 4: 94-97.
83RAM 01	G. O. Ramseyer and G. H. Morrison (1983) Relative Sensitivity Factors in Quantitative Secondary Ion Mass Spectrometry Analysis of Biological Reference Materials <i>Analytical Chemistry</i> , 55: 1963-1970.
83RAP 01	S. E. Raptis, G. Knapp, and A. P. Schalk (1983) Novel Method for the Decomposition of Organic and Biological Materials in an Oxygen Plasma Excited at High Frequency for Elemental Analysis, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 316: 482-487.
83SAN 02	R. W. Sanders, K. Olsen, W. Weimer, and K. Nielson (1983) Multielement Analysis of Unweighed Oil Samples by X-ray Fluorescence Spectrometry with Two Excitation Sources, <i>Analytical Chemistry</i> , 55: 1911-1914.

CODE N	REFERENCE
83SAR 01	B. Sarx and K. Bachmann (1983) Speciation von As-Verbindungen durch Verfluchtigung aus Festproben, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 316: 621-626.
83SCH 03	P. Schramel and X. Li-Qiang (1983) Determination of 14 Elements in Biological Samples by Simultaneous Inductively Coupled Plasma Atomic Emission Spectrometry using Standard Reference Materials as Multielement Standards, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 314: 671-677.
83SCH 04	P. Schramel (1983) Consideration of Inductively Coupled Plasma Spectrometry for Trace Element Analysis in the Bio-medical and Environmental Fields, <i>Spectrochimica Acta</i> , 38B: 199-206.
83SHO 01	F. J. Shorten, editor (1983) NBS Reactor: Summary of Activities July 1981 through June 1982, <i>NBS Technical Note</i> .
83SIR 01	C.-I. Siripone, G. D. Wals, and H. A. Das (1983) Neutron Activation Analysis of Dry Biological Materials using Mineralization with a Saturated Mg(NO <sub>3</sub> ) <sub>2</sub> Solution and Scavenging by Activated Carbon, <i>Journal of Radioanalytical Chemistry</i> , 79: 35-41.
83SIU 01	K. W. M. Siu and S. S. Berman (1983) Determination of Selenium in Marine Sediments by Gas Chromatography with Electron Capture Detection, <i>Analytical Chemistry</i> , 55: 1603-1605.
83STE 05	J. W. Steiner and H. L. Kramer (1983) In-situ Gaseous Pre-treatment of Liver Extracts in a Modified Carbon Rod Atomizer During the Determination of Cadmium and Lead, <i>Analyst</i> , 108: 1051-1059.
83TAK 01	Y. Takahashi and M. Rey (1983) A Dedicated XRF Analyzer for Sulfur in Oils, <i>American Laboratory</i> , 15(11): 27-42.
83TAK 02	H. Takagi, T. Kimura, K. Iwashima, and N. Yamagata (1983) A Simple and Rapid Method for the Determination of Iodine in Rice Samples by Radiochemical Neutron Activation Analysis, <i>Bunseki Kagaku</i> , 32: 513-515.
83TER 01	S. Terashima (1983) Determination of Beryllium in Eighty Geological Reference Samples by Atomic Absorption Spectrometry, <i>Geostandards Newsletter</i> , 7: 295-299.
83TJI 01	P. S. Tjioe, K. Volkers, J. Kroon, and J. de Goeij (1983) . Distribution Patterns of Rare-earth Elements in Biological Materials Evaluated by Radiochemical Neutron Activation Analysis, <i>Journal of Radioanalytical Chemistry</i> , 80: 129-139.
83UCH 01	H. Uchikawa, R. Furuta, and Y. Mihara (1983) Determination of Phosphorus in Ceramic Materials and Ceramic Products by Inductively Coupled Plasma Atomic Emission Spectroscopy, <i>Bunseki Kagaku</i> , 32: 291-297.
83UCH 02	H. Uchikawa, R. Furuta, and Y. Mihara (1983) Determination of Cadmium in Ceramic Materials and Ceramic Products by Inductively Coupled Plasma-Atomic Emission Spectroscopy, <i>Bunseki Kagaku</i> , 32: 675-677.
83VAL 01	G. Valentine (1983) Procedures for Analysis of Silicate Rocks and Minerals at Los Alamos National Laboratory by X-ray Fluorescence, Los Alamos National Laboratory report LA-9663-MS.

CODE	N	REFERENCE	CODE	N	REFERENCE
83WE1	02	S. H. Weissman, R. L. Carpenter, and G. J. Newton (1983) Respirable Aerosols from Fluidized Bed Coal Combustion. 3: Elemental Compositon of Fly Ash, Environmental Science and Technology, 17: 65-70.	84BLA	01	W. M. Blakemore, P. H. Casey, and W. R. Collie (1984) Simultaneous Determination of 10 Elements in Wastewater, Plasma, and Bovine Liver by Inductively Coupled Plasma Emission Spectrometry with Electrothermal Atomization, Analytical Chemistry, 56: 1376-1379.
83XIA	01	S. Xiao-quan, N. Zhe-ming, and Z. Li (1983) Determination of Arsenic in Soil, Coal Fly Ash, and Biological Samples by Electrothermal Atomic Absorption with Matrix Modification, Analytica Chimica Acta, 151: 179-185.	84BOR	01	T. Bornhorst, W. Rose, and S. Wolfe (1984) Gold Content of Eleven French Geochemical Reference Samples, Geostandards Newsletter, 8: 1-2.
83YAN	01	M. Yanagisawa, H. Suzuki, K. Kitagawa, and S. Tsuge (1983) Separative Column Atomizer (SCA) for Direct Analysis by Atomic Absorption Spectrometry: GC Separation Characteristics Spectrochimica Acta, 38B: 1143-1149.	84BOT	01	R. I. Botto (1984) Quality Assurance in Operating a Multielement ICP Emission Spectrometer, Spectrochimica Acta, 39B: 95-113.
84ABD	01	M. Abdullah, K. Fuwa, and H. Haraguchi (1984) Simultaneous Multielement Analysis of Microliter Volumes of Solution Samples by Inductively Coupled Plasma Atomic Emission Spectrometry Utilizing a Graphite Cup Direct Insertion Technique, Spectrochimica Acta, 39B: 1129-1139.	84BRA	01	H. Braun and M. Metzger (1984) Umweltanalytische Nickel-Bestimmung durch Adsorptions Voltammetrie mit der Quecksilberfilmelektrode, Fresenius Zeitschrift fur Analytische Chemie, 318: 321-326.
84ADE	01	S. B. Adelouju, A. M. Bond, and M. H. Briggs (1984) Critical Evaluation of Some Wet Digestion Methods for the Stripping Voltammetric Determination of Selenium in Biological Materials, Analytical Chemistry, 56: 2397-2401.	84BRA	02	P. Bratton and P. Schramel, editors (1984) Trace Element Analytical Chemistry in Medicine and Biology, Proceedings of the Third International Workshop, Neuherberg, Federal Republic of Germany, Walter de Gruyter & Company, Berlin, Vol. 3.
84ADE	02	S. B. Adelouju, A. M. Bond, and M. H. Briggs (1984) Assessment of Differential-pulse Adsorption Voltammetry for the Simultaneous Determination of Nickel and Cobalt in Biological Materials, Analytica Chimica Acta, 164: 181-194.	84BRO	03	A. Broekman and J. G. van Raaphorst (1984) Stable Isotope Dilution Analysis by Thermal Ionization Mass Spectrometry (II): The Determination of Cd and Cu, Fresenius Zeitschrift fur Analytische Chemie, 318: 398-401.
84ADE	03	S. B. Adelouju, A. M. Bond, and M. L. Noble (1984) Evaluation of Some Dry Ashing Methods for Anodic Stripping Voltammetric Determination of Cadmium and Lead in Biological Materials, Analytica Chimica Acta, 161: 303-314.	84BUS	01	G. Buso, P. Colautti, G. Moschini, H. Xusheng, and B. Stievano (1984), High Sensitivity PIXE Determination of Selenium in Biological Samples using a Preconcentration Technique, Nuclear Instruments and Methods, 231: 177-180.
84AHL	01	M. S. Ahlberg, I. Fangmark, and L. E. Carlsson (1984) Elemental Particle Size Distribution in Coal Fly Ash Determined by PIXE Analysis of Thick Samples, Nuclear Instruments and Methods in Physical Research, 231: 511-515.	84BYR	01	A. R. Byrne (1984) A Simple Radiochemical Procedure for Analysis of Molybdenum and Tungsten in Biological Materials by Radiochemical Activation Analysis, in 84BRA 02, pp. 505-511.
84ALF	01	G. Alfthan (1984) A Micromethod for the Determination of Selenium in Tissues and Biological Fluids by Single-test-tube Fluorimetry, Analytica Chimica Acta, 165: 187-194.	84BYR	02	A. R. Byrne, M. Dermelj, L. Kosta, and M. Tusek-Znidaric (1984), Radiochemical Neutron Activation Analysis in the Standardization of Trace Elements in Biological Reference Materials at the Nanogram Level, Mikrochimica Acta [Wien], 1984: 119-126.
84ALK	01	A. Al-Kinai, D. Watt, B. East, and I. Harris (1984) Minor and Trace Analysis of Gallstones, Analyst, 109: 365.	84CEL	01	I. Celenk and F. Ozek (1984) Simultaneous Neutron Activation Determination of Alumina and Silica in Geological Samples using a 5 Ci Pu-Be Source, Journal of Radioanalytical and Nuclear Chemistry, 85: 83-90.
84BAR	02	R. T. Barber, P. J. Whaling, and D. M. Cohen (1984) Mercury in Recent and Century-old Deep-sea Fish, Environmental Science and Technology, 18: 552-555.	84CHA	02	M. S. Chaudhary, S. Ahmad, A. Mannan, and I. Qureshi (1984) INAA of Toxic Elements in Coal and Their Transfer into Environments, Journal of Radioanalytical and Nuclear Chemistry, 83: 387-396.
84BAR	03	P. Barrett and E. Purszkowska (1984) Use of Organic Solvents for Inductively Coupled Plasma Analyses, Analytical Chemistry, 56: 1927-1930.	84CLE	01	B. E. Clevenger, E. Hinderberger, D. Yates, and W. James (1984), Analysis for Trace Elements in Magnetohydrodynamic (MHD) Pilot Power Plant Effluents, Environmental Science and Technology, 18: 253-257.
84BAU	01	J. Bauslaugh, B. Radziuk, K. Saeed, and Y. Thomassen (1984) Reduction of Effects of Structured Non-specific Absorption in the Determination of Arsenic and Selenium by Electrothermal Atomic Absorption Spectrometry, Analytica Chimica Acta, 165: 149-157.	84CUB	01	M. J. S. Cubells, M. G. Cuiugeda, and L. A. Querada (1984) Rapid Determination of Copper, Iron, and Zinc in Liver Biopsies, Atomic Spectroscopy, 5: 217-221.
84BEM	01	H. Bem and D. E. Ryan (1984) Determination of Seven Trace Elements in Natural Waters by Neutron Activation Analysis after Preconcentration With 1-(2-Pyridylazo)-2-naphthol, Analytica Chimica Acta, 166:189	84DAS	01	S. Dasgupta, B. Sinha, and N. S. Rawat (1984) Direct Complexometric Determination of Aluminium and Moderate to Low Amounts of Titanium and Iron using Tartaric Acid as a De-masking Agent, Analyst, 109: 39-41.
84BIS	01	S. Biswas, M. Khaliquezzaman, M. Islam, and A. Kahn (1984) The Use of a Single Multielement Standard for Trace Analysis in Biological Materials by External Beam PIXE, Nuclear Instruments and Methods in Physical Research, 231: 337-342.			

CODE N	REFERENCE
--------	-----------

- 84DEL 01 R. Delfanti, M. Dicosa, M. Gallorini, and E. Orvini (1984)  
Five Years Activity in Determining Trace Elements for the  
Certification of Standard Reference Materials by Neutron  
Activation Analysis, *Mikrochimica Acta [Wien]*, 1984/1: 239.
- 84DRA D1 I. Drabæk and V. Carlsen (1984)  
Comparison of Different Analytical Techniques for the  
Determination of Organic Mercury, *International Journal of  
Environmental Analytical Chemistry*, 17: 231-239.
- 84FAR 01 J. J. Fardy and G. D. McOrist (1984)  
Determination of Iodine in Milk Products and Biological  
Standard Reference Materials by Epithermal Neutron  
Activation Analysis, *Journal of Radioanalytical and Nuclear  
Chemistry*, 87: 239-246.
- 84FAR 02 J. J. Fardy, G. D. McOrist, and T. M. Florence (1984)  
Rapid Radiochemical Separation in Neutron Activation  
Analysis, Part 1: The Use of C-18 Bonded Silica Gel and  
Selective Complexation for Determination of Manganese,  
Copper, and Zinc in Biological Materials, *Analytica Chimica  
Acta*, 159: 199-209.
- 84FAS 01 J. D. Fassett, L. J. Powell, and L. J. Moore (1984)  
Determination of Iron in Serum and Water by Resonance  
Ionization Isotope Dilution Mass Spectrometry,  
*Analytical Chemistry*, 56: 2228-2233.
- 84FEN 01 X. Feng and D. E. Ryan (1984)  
Combination Collectors in Adsorption Colloid Flotation for  
Multielement Determination in Waters by Neutron Activation,  
*Analytica Chimica Acta*, 162: 47-55.
- 84FOG 01 T. R. Fogg and R. C. Seeley (1984)  
ICP-OES Analysis of Atmospheric Aerosol Particles,  
*American Laboratory*, 16 (12): 36-39.
- 84FUD 01 N. Fudagawa (1984)  
Determination of Lead by Atomic Absorption Spectrometry  
with Tungsten Ribbon Atomizer, *Bunseki Kagaku*, 33: 301.
- 84FUD 02 N. Fudagawa and A. Kawase (1984)  
Elimination of Nitric Acid Interference in Tungsten Ribbon  
Atomic Absorption, *Bunseki Kagaku*, 33: 331.
- 84GIB 01 R. S. Gibson and C. A. Scythes (1984)  
Chromium, Selenium, and Other Trace Element Intakes of a  
Selected Sample of Canadian Premenopausal Women, *Biological  
Trace Element Research*, 6: 105-116.
- 84GLA 01 E. S. Gladney, D. B. Curtis, and D. R. Perrin (1984)  
Determination of Boron in 35 International Geochemical  
Reference Materials by Thermal Neutron Capture Prompt  
Gamma-ray Spectrometry, *Geostandards Newsletter*, 8: 43-46.
- 84GLA 02 E. S. Gladney, C. Burns, D. Perrin, R. Robinson, and D. Knab  
(1984), Quality Assurance for Environmental Analytical  
Chemistry: 1982, Los Alamos National Laboratory report  
LA-9950-MS.
- 84GLA 07 E. S. Gladney, D. Perrin, R. Robinson, and P. Trujillo (1984)  
Multitechnique Determination of Elemental Concentrations  
in NBS Urban Air Particulate SRM 1648 and Evaluation of its  
use for Quality Assurance, *Journal of Radioanalytical  
Chemistry*, 83: 379-386.
- 84GLA 11 E. S. Gladney, C. E. Burns, D. R. Perrin, R. D. Robinson,  
and N. Raybold (1984), Quality Assurance for Environmental  
Analytical Chemistry: 1983, Los Alamos National Laboratory  
report LA-10115-MS.

CODE N	REFERENCE
--------	-----------

84GOH 01 S. Gohda, H. Yamazaki, and H. Kataoka (1984)  
Determination of Molybdenum in Environmental Materials by  
Polarized Zeeman Atomic Absorption Spectrophotometry with  
Graphite Furnace, *Bunseki Kagaku*, 33: 410-412.

84GOL 01 S. S. Goldich (1984)  
Determination of Ferrous Iron in Silicate Rocks,  
*Chemical Geology*, 42: 343-347.

84GRE D1 R. J. Green and C. J. Asher (1984)  
Measurement of Sub-microgram Amounts of Nickel in Plant  
Material by Electrothermal Atomic Absorption Spectroscopy,  
*Analyst*, 109: 503-505.

84HAN 01 A. L. Hanson, H. W. Kraner, R. E. Shroy, and K. Jones (1984)  
Measurement of the Fluorine Content of Three NBS Standard  
Reference Materials by use of the F-19(P,P'gamma)F-19  
Reaction, *Nuclear Instruments and Methods in Physical  
Research*, 232: 401-403.

84HAR 01 J. M. Harnly and J. S. Kane (1984)  
Optimization of Electrothermal Atomization Parameters for  
Simultaneous Multielement Atomic Absorption Spectrometry,  
*Analytical Chemistry*, 56: 48-54.

84HAR 02 J. M. Harnly, N. Miller-Ihl, and T. O'Haver (1984)  
Simultaneous Multielement Atomic Absorption Spectrometry  
with Graphite Furnace Atomization, *Spectrochimica Acta*,  
39B: 305-320.

84HEA 01 J. B. Headridge and I. M. Riddington (1984)  
Determination of Silver, Lead, and Bismuth in Glasses by  
Atomic Absorption Spectrometry with Introduction of Solid  
Samples into Furnaces, *Analyst*, 109: 113-118.

84HER 01 J. L. Hern (1984)  
Determination of Total Sulfur in Plant Materials using an  
Automated Sulfur Analyzer, *Communications in Soil Science  
and Plant Analysis*, 15: 99-107.

84HIG 01 M. D. Higgins (1984)  
Abundance of Boron in International Geochemical Standards  
by Prompt-gamma Neutron Activation Analysis, *Geostandards  
Newsletter*, 8: 31-34.

84HIL 01 L. R. Hilpert, G. D. Bryd, and C. R. Vogt (1984)  
Selectivity of Negative Ion Chemical Ionization Mass  
Spectrometry for Benzo[a]pyrene, *Analytical Chemistry*,  
56: 1842-1846.

84HIR D1 S. Hirata (1984)  
Simultaneous Determination of Multielement in Standard  
Silicate Rocks and Sediments by Inductively Coupled Plasma  
Atomic Emission Spectrometry, *Bunseki Kagaku*, 33: T66-T68.

84HIR 02 K. Hirayama and N. Unohara (1984)  
A New Sensitive Catalytic Method for Determination of  
Ultratrace Manganese(II) based on Oxidation of N,N-Diethyl-  
Aniline by Potassium Periodate, *Bunseki Kagaku*, 33: E517.

84HOF 01 D. Hoffer, I. B. Brenner, and L. Halicz (1984)  
Application of an Argon ICP for the Analysis of the Major  
and Minor Elements in Phosphate Rocks and Related Minerals,  
*ICP Information Newsletter*, 9: 494-509.

84HUD 01 V. Hudník, M. Marolt-Gomiscek, and S. Gomiscek (1984)  
The Determination of Trace Metals in Human Fluids and  
Tissues: Part 1, Estimation of "Normal Values" for Copper,  
Zinc, Cadmium, and Manganese in Blood Serum and Liver  
Tissue, *Analytica Chimica Acta*, 157: 143-150.

CODE N	REFERENCE	CODE N	REFERENCE
84HUD 03	V. Hudnik, M. Marolt-Gomiscek, and S. Gomiscek (1984) The Determination of Trace Metals in Human Fluids and Tissues: Part 2, The Homogeneity of Liver Tissue for Sampling, <i>Analytica Chimica Acta</i> , 157: 183-186.	84KRI 01	K. V. Krishnamurty and M. M. Kellogg (1984) Interlaboratory Comparison of Alfalfa as a Vegetation Standard in Chemical and Radiochemical Analysis, Proceeding of the 30th Annual Conference on Bioassay, Analytical and Environmental Chemistry, Cincinnati, Ohio.
84IKE 01	M. Ikeda, F. Nakata, H. Matsuo, and T. Kumamaru (1984) Suction-flow Hydride Generation-Heated Quartz Cell Atomic Absorption Spectrometry of Arsenic (III, V) by Utilizing Sensitivity Enhancement Effect of Air Introduction, <i>Bunseki Kagaku</i> , 33: 417-420.	84KUB 01	T. Kubota, T. Ueda, and T. Okutani (1984) Determination of Phosphorus by Atomic Absorption Spectrometry using a Zirconium Treated Graphite Tube, <i>Bunseki Kagaku</i> , 33: 637.
84IMA 01	N. Imai, S. Terashima, and A. Ando (1984) Determination of Selenium in Twenty-eight Geological Reference Materials by Atomic Absorption Spectrometry, <i>Geostandards Newsletter</i> , 8: 39-41.	84KUL 01	I. Kuleff, R. Ojingova, and I. Penev (1984) Analysis of Ancient and Medieval Glasses by INAA, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 83: 333-343.
84IMA 02	K. Imaeda, Y. Kuwagaki, K. Ohsawa, M. Sano, T. Yokoyama, T. Tsutsumi, Y. Ohtani, K. Tamura, and A. Yokota (1984) Determination of Zinc, Copper, Iron, Calcium, and Manganese in Human Placenta by Acid Extraction-Atomic Absorption Spectrometry, <i>Bunseki Kagaku</i> , 33: T103-T107.	84KUM 01	T. Kumamaru, F. Nakata, S. Hara, H. Matsuo, and M. Kiboku (1984), Atomic Absorption Spectrometry of Lead by Suction Flow Hydride Generation-Heated Quartz Cell Atomization, <i>Bunseki Kagaku</i> , 33: 626.
84IMA 03	N. Imai, S. Terashima, and A. Ando (1984) Determination of Selenium in Geological Materials by Automated Hydride Generation and Electrothermal Atomic Absorption Spectrometry, <i>Bunseki Kagaku</i> , 33: 290.	84KUR 01	U. Kurfurst, H. H. Grobecker, and M. Stoepller (1984) Homogeneity Studies in Biological Reference and Control Materials with Solid Sampling and Direct Zeeman-AAS, in 84BRA 02, pp. 591-601.
84JAC 01	L. L. Jackson, E. E. Engleman, and J. L. Pearn (1984) Determination of Total Sulfur in Lichens by Combustion-Infrared Analysis, U. S. Geological Survey Open-File Report 84-656.	84KYL 01	P. R. Kyle (1984) Written Communication, Department of Geoscience, New Mexico Institute of Mining and Technology, Socorro, New Mexico.
84JEN 01	B. B. Jensen, J. N. Marcussen, and N. Pind (1984) Software Package for Quantitative Analysis of Solid Materials by Energy-dispersive X-ray Fluorescence Spectrometry Without Absolute Calibration, <i>Analytica Chimica Acta</i> 161: 175-186.	84LAN 01	S. Landsberger and E. Hoffman (1984) Rapid Determination of Selenium in Various Marine Species by Instrumental Neutron Activation Analysis, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 87: 41-50.
84JEN 02	D. R. Jenke (1984) Analytical and Sampling Methodology used for Determining the Impact of a MHD Test Facility, <i>Analytical Letters</i> , 17: 735-755.	84LAN 02	S. Landsberger, A. Giovagnoli, J.-L. Debrun, and P. Albert (1984), Sulphur Determination in Coal by Proton Activation Analysis, <i>International Journal of Environmental Analytical Chemistry</i> , 16: 295-303.
84KAM 01	E. Kamata, R. Nakashima, and S. Shibata (1984) Determination of Chromium in Coal Ash by Atomic Absorption Spectrometry after Wet Digestion, <i>Bunseki Kagaku</i> , 33: 177.	84LAU 01	O.-W. Lau, P.-K. Hon, C.-Y. Cheung, and M.-C. Wong (1984) Uses of Silica Cells for the Static Cold Vapour Atomic Absorption Determination of Mercury Without Background Correction, <i>Analyst</i> , 109: 1175-1178.
84KAN 01	R. Kanipayor, D. Narajit, B. Radziuk, and J. C. van Loon (1984), Direct Analysis of Solids for Trace Elements by Combined Electrothermal Furnace/Quartz T-tube/Flame Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 166: 39-49.	84LEC 02	LECO Corporation (1984) The LECO SC-32, SC-132, and SC-232 Determine Sulfur in ..., Applications Note 5M-SPO-10/84-12MTD.
84KAT 01	T. Katami, T. Hayakawa, M. Furukawa, and S. Shibata (1984) Extraction and Spectrophotometric Determination of Nickel in Coal Fly Ashes and Stack Gas using 2-(2-(3,5-dibropyridyl) azo)-5-dimethylaminobenzoic Acid, <i>Analyst</i> , 109: 731-733.	84LEW 01	S. A. Lewis, T. C. O'Haver, and J. M. Harnly (1984) Analysis of Blood Serum for Essential Metals by Simultaneous Multielement Atomic Absorption Spectrometry with Flame Atomization, <i>Analytical Chemistry</i> , 56: 1066.
84KAU 01	H. C. Kaufmann and J. Steenblik (1984) Thick Target Elemental Analysis of Organic and Inorganic Materials by PIXE using Thin Film Standards, <i>Nuclear Instruments and Methods in Physics Research</i> , 231: 198-202.	84LIE 01	I. Liem, G. Kaiser, and M. Sager (1984) The Determination of Thallium in Rocks and Biological Materials with ng/g Levels by Differential-Pulse Anodic Stripping Voltammetry and Electrothermal Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 158: 179-197.
84KEL 01	W. R. Kelly and P. J. Paulsen (1984) Precise and Accurate Determination of High Concentrations of Sulphur by Isotope-dilution Thermal-ionization Mass Spectrometry, <i>Talanta</i> , 31: 1063-1068.	84LIN 01	S.-W. Lin and K. Julshamn (1984) A Comparative Study of the Determination of Phosphorus by Electrothermal Atomic Absorption Spectrometry and Solution Spectrophotometry, <i>Analytica Chimica Acta</i> , 158: 199.
84KNA 01	G. Knapp (1984) Der Weg zu leistungsfähigen Methoden der Elementspurenanalyse in Umweltproben, <i>Fresenius Zeitschrift für Analytische Chemie</i> , 317: 213-219.	84LIV 01	R. R. Liversage, J. C. van Loon, and J. C. De Andrade (1984) A Flow Injection - Hydride Generation System of the Determination of Arsenic by Inductively Coupled Plasma Atomic Emission Spectrometry, <i>Analytica Chimica Acta</i> , 161: 275-283.

CODE N	REFERENCE
84LOC 01	C. Locatelli, F. Fagioli, C. Bighi, and L. Scanavini (1984) Simultaneous Determination of Trace Metals in Vegetable Materials by Alternating Current Anodic Stripping Voltammetry and Atomic Absorption Spectroscopy, in 84BRA 02, pp. 529-535.
84LON 01	J. Long-zhu (1984) Determination of Trace Tin in River Sediment and Coal Fly Ash by Graphite Furnace Atomic Absorption Spectrometry using a Mixture of Ascorbic Acid and Iron as a Matrix Modifier, Atomic Spectroscopy, 5: 91-95.
84LUN 01	E. Lundberg, W. Frech, and I. Lindberg (1984) Determination of Lead in Biological Materials by Constant Temperature Electrothermal Atomic Absorption Spectrometry, Analytica Chimica Acta, 160: 205-215.
84MAR 01	D. B. Martin and W. A. Hartman (1984) Arsenic, Cadmium, Lead, Mercury, and Selenium in Sediments of Riverine and Pothole Wetlands of the North Central US, Journal of the Association of Official Analytical Chemists, 67: 1141-1144.
84MAT 01	K. Matsumoto, T. Ishiwatari, and K. Fuwa (1984) Hydride Generation and Atomic Emission Spectrometry with Helium Glow Discharge for Analysis of Biological Samples, Analytical Chemistry, 56: 1545-1548.
84MAY 01	W. E. May and S. A. Wise (1984) Liquid Chromatographic Determination of Polycyclic Aromatic Hydrocarbons in Air Particulate Extracts, Analytical Chemistry, 56: 225-232.
84MCA 01	J. M. McArthur and J. N. Walsh (1984) Rare-Earth Geochemistry of Phosphorites, Chemical Geology, 47: 191-220.
84MEL 01	R. A. Mellor (1984) Private Communication; quoted in 84KRI 01.
84MIA 01	Z. Mianzhi and R. M. Barnes (1984) Determination of Trace Elements in Serum using Inductively Coupled Plasma Atomic Spectroscopy with Hydride Generation and Chelating Resin Preconcentration, Applied Spectroscopy, 38: 635-639.
84MIL 01	N. J. Miller-Ihli, T. C. O'Haver, and J. M. Harnly (1984) Staircase Modulation Wave Form for Continuum Source Atomic Absorption Spectrometry, Analytical Chemistry, 56: 176-181.
84MOK 01	W. M. Mok and C. M. Wai (1984) Preconcentration with Dithiocarbamate Extraction for Determination of Molybdenum in Sea Water by Neutron Activation Analysis, Analytical Chemistry, 56: 27-29.
84MOK 02	W. M. Mok, H. Wilmes, and C. M. Wai (1984) Solvent Extraction of Molybdenum from Biological Samples and from Coal Fly Ash for Neutron Activation Analysis, Analytical Chemistry, 56: 2623-2624.
84MOR 01	M. Morita, T. Uehiro, and K. Fuwa (1984) Determination of Sulfur in Biological Samples by Vacuum Ultraviolet Inductively Coupled Plasma Atomic Emission Spectrometry, Analytica Chimica Acta, 166: 283-288.
84NAD 01	R. A. Nadkarni (1984) Applications of Microwave Oven Sample Dissolution in Analysis, Analytical Chemistry, 56: 2233-2237.

CODE N	REFERENCE
84NAD 02	R. A. Nadkarni and R. I. Botto (1984) Determination of Germanium in Coal Ashes by Inductively Coupled Plasma Atomic Emission Spectrometry, Applied Spectrometry, 38: 595-598.
84WAG 01	Y. Nagaoa and K. Kobayashi (1984) Differential Pulse Polarographic Determination of Molybdenum after Separation by 8-Hydroxyquinoline Extraction into Dichloromethane, Talanta, 31: 593-596.
84NAK 01	R. Nakashima, E. Kamata, and S. Shibata (1984) Atomic Absorption Spectrometric Determination of Trace Elements in Coal by using an Acid Digestion in Sealed Polytetrafluoroethylene Vessel, Bunseki Kagaku, 33: E343.
84NAR 01	H. Narasaki and M. Ikeda (1984) Automated Determination of Arsenic and Selenium by Atomic Absorption Spectrometry with Hydride Generation, Analytical Chemistry, 56: 2059-2063.
84NAR 02	D. A. Narenjit, B. Radziuk, and J. C. Van Loon (1984) A Zeeman-effect Based Scatter Correction System for Non-dispersive Atomic Fluorescence Spectrometry, Spectrochimica Acta, 39B: 969-977.
84NDI 01	L. Ndiokwere (1984) Determination of Constituent Elements in some Nigerian Medicinal Plants by Thermal Neutron Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 85: 325.
84ODD 01	M. Oddone, S. Meloni, and N. Genova (1984) Neutron Activation Analysis: A Powerful Tool for Assay of Rare-earth Elements in Terrestrial Materials, Inorganica Chimica Acta, 94: 283-290.
84OGU 01	K. Oguma, S. Ishino, and R. Kuroda (1984) Spectrophotometric Determination of Calcium in Silicate Rocks, Bunseki Kagaku, 33: 284.
84OHL 01	K. Ohls (1984) Die Bestimmung kleiner Cadmium-Anteile in verschiedenen Materialien durch Festprobeneinsatz bei ICP- und flammenloser Atomabsorptionsspektrometrie, Spectrochimica Acta, 39B: 1105.
84OST 01	P. Ostapczuk, M. Goedde, M. Stoeppler, and H. Nurnberg (1984), Kontroll- und Routinebestimmung von Zn, Cd, Pb, Cu, Ni, und Co mit Differentieller Pulsvoltammetrie in Materialien des Deutschen Umweltprobenbank, Fresenius Zeitschrift fur Analytische Chemie, 317: 252-256.
84PIN 01	N. Pind (1984) Standard-addition Procedure for the Determination of Traces of Lead in Solid Samples by X-ray Fluorescence Spectrometry, Talanta, 31: 1118-1120.
84PLS 01	E. Plsko and J. Kubova (1984) Ein Korrektur-Verfahren zur Spektrographischen Bestimmung von Vanadin in Karbonatgesteinen, Spectrochimica Acta, 39B: 1483-1485.
84PRI 01	M. W. Pritchard and J. Lee (1984) Simultaneous Determination of Boron, Phosphorus, and Sulfur in some Biological and Soil Materials by Inductively Coupled Plasma Emission Spectrometry, Analytica Chimica Acta, 157: 313-326.
84RAB 01	M. Rabinowitz and H. Finch (1984) Cadmium Content of Umbilical Cord Blood, Environmental Research, 34: 120-122.

CODE N	REFERENCE	CODE N	REFERENCE
84RIC 01	T. D. Rice, V. Sweeney, R. Semitekolos, and G. Rhyder (1984) Standard-addition Determination of Nitrogen in Coal with an Ammonia-sensitive Electrode, <i>Talanta</i> , 31: 607-610.	84SIM 03	W. J. Simonsick and R. A. Hites (1984) Analysis of Isomeric Polycyclic Aromatic Hydrocarbons in Charge-Exchange Chemical Ionization Mass Spectrometry, <i>Analytical Chemistry</i> , 56: 2749-2754.
84RIN 01	O. Ringdal, K. Julshann, K. Andersen, and E. Svendsen (1984) Determination of Selenium in Human Tissue Samples using Graphite Furnace Atomic Absorption Spectrometry based on Zeeman Effect Background Correction, <i>84BRA 02</i> , pp. 189-199.	84SIU 01	K. W. M. Siu and S. S. Berman (1984) Comparison of Two Digestion Methods used in the Determination of Selenium in Marine Biological Tissues by Gas Chromatography with Electron-capture Detection, <i>Talanta</i> , 31: 1010-1012.
84ROS 01	A. Rosopulo, K. H. Grobecker, and U. Kurfurst (1984) Untersuchungen über die Schwermetallanalyse in Feststoffen mit der direkten Zeeman-Atom-Absorptionspektroskopie, <i>Fresenius Zeitschrift für Analytische Chemie</i> , 319: 540-546.	84SLA 02	W. Slavin and G. R. Carnrick (1984) The Possibility of Standardless Furnace Atomic Absorption Spectroscopy, <i>Spectrochimica Acta</i> , 39B: 271-282.
84ROS 03	G. Rosner, K. Bunzl, H. Hotz, and R. Winkler (1984) Low Level Measurements of Natural Radionuclides in Soil Samples around a Coal-fired Power Plant, <i>Nuclear Instruments and Methods in Physics Research</i> , 223: 585-589.	84SNE 01	J. Sneddon and V. A. Fuavao (1984) Observations on a Matrix Interference in the Measurement of Lead by D. C. Argon Plasma Emission Spectroscopy, <i>Atomic Spectroscopy</i> , 5: 108.
84ROU 01	M. Rousseau, C. Friedli, and P. Lerch (1984) Trace Determination of Sulfur by Heavy Ion Activation Analysis, <i>Analytical Chemistry</i> , 56: 2854-2856.	84SOB 01	C. B. Sobel (1984) Automatic Simultaneous Multielement Analysis of Microvolume Samples with an Inductively Coupled Plasma Source, <i>Applied Spectroscopy</i> , 38: 444-447.
84SAT 01	T. Sato (1984) The Determination of Zirconium in Biological Materials by Photon Activation Analysis, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 86: 141-150.	84STO 01	M. Stoeppeler (1984) Bedeutung von Umweltprobenbanken-Anorganisch-Analytische Aufgabenstellungen und erste Ergebnisse des Deutschen Umweltprobenbankprogramms, <i>Fresenius Zeitschrift für Analytische Chemie</i> , 317: 228-235.
84SAT 02	C. Sato and M. Taga (1984) Separation and Concentration of Trace Heavy Metals in Foods with Chelating Resin, <i>Bunseki Kagaku</i> , 33: 500-503.	84SUN 01	J. F. C. Sung, A. E. Nevissi, and F. B. Dewalle (1984) Simple Sample Digestion of Sewage and Sludge for Multielement Analysis, <i>Journal of Environmental Science and Health</i> , A19: 959-972.
84SCH 01	H. Schinkel (1984) Bestimmung von Calcium, Magnesium, Strontium, Kalium, Natrium, Lithium, Eisen, Mangan, Chrom, Nickel, Kupfer, Cobalt, Zink und Cadmium. Eine Universalvorschrift zur Untersuchung von Wassern, Kohlen, Aschen, Schlacken, Erzen, Gesteinen, Baustoffen, Metallen, und ähnlichen Proben, <i>Fresenius Zeitschrift für Analytische Chemie</i> , 317: 10-26.	84SUZ 01	N. Suzuki, S. Nakamura, and H. Imura (1984) Substoichiometric Determination of Manganese in a Synergistic Extraction System and its Application to the Analysis of Biological Materials, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 81: 37-48.
84SCH 03	F. Schlieckmann and F. Umland (1984) Ein Neuartiges Effizientes Aufschlussverfahren für die Multielementbestimmung von Schwermetallen in Luftstauben, <i>Fresenius Zeitschrift für Analytische Chemie</i> , 318: 495-497.	84SUZ 02	S. Suzuki and S. Hirai (1984) Activation Analysis of Trace Elements in Coal and Fly Ash by Low Energy Photon Spectrometry, <i>Bunseki Kagaku</i> , 33: 197.
84SCH 04	H. Schelhorn and M. Geisler (1984) Zum Einsatz von Radiotraceren zur Ausbeutebestimmung in der Neutronenaktivierungsanalyse, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 83: 5-11.	84SUZ 03	H. Suzuki, H. Minami, K. Abe, H. Hiraiwa, and T. Uchida (1984), Comparison of Sample Decomposition Methods for Atomic Absorption Spectrometry of Eight Elements in Chinese Cabbage, <i>Bunseki Kagaku</i> , 33: T-9.
84SHI 01	J. Shida, Y. Takahashi, and K. Ojima (1984) Flotation-spectrophotometric Determination of Germanium with Phenylfluorone in Coal Fly Ash, <i>Bunseki Kagaku</i> , 33: E143.	84TAK 01	Y. Takehami and M. Rey (1984) A Dedicated XRF Analyzer for Sulfur in Oils, <i>International Laboratory</i> , 14 (1): 84-93.
84SIL 01	D. Silberman and W. R. Harris (1984) Determination of Arsenic(III) and Arsenic(V) in Coal and Oil Fly Ashes, <i>International Journal of Environmental Analytical Chemistry</i> , 17: 73-83.	84TER 01	S. Terashima (1984) Determination of Cadmium and Lead in Seventy-seven Geological Reference Samples by Atomic Absorption Spectrometry, <i>Geostandards Newsletter</i> , 8: 13-16.
84SIM 01	M. Simonoff, Y. Llabador, C. Hamon, and G. Simonoff (1984) Extraction Procedure for the Determination of Trace Chromium in Plasma by Proton-induced X-ray Emission Spectrometry, <i>Analytical Chemistry</i> , 56: 454-457.	84TER 02	S. Terashima (1984) Determination of Bismuth in Geological Materials by Automated Hydride Generation and Electrothermal Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 156: 301.
84SIM 02	M. Simonoff, Y. Llabador, G. Simonoff, P. Besse, and C. Conri (1984), Cineangiographically Determined Coronary Artery Disease and Plasma Chromium Levels for 150 Subjects, <i>Nuclear Instruments and Methods</i> , 231: 368-372.	84TER 03	S. Terashima (1984) Determination of Bismuth in Eighty-three Geochemical Reference Samples by Atomic Absorption Spectrometry, <i>Geostandards Newsletter</i> , 8: 155-158.

CODE N	REFERENCE
84TER 04	S. Terashima (1984) Determination of Arsenic and Antimony in Geological Materials by Automated Hydride Generation and Electrothermal Atomic Absorption Spectrometry, <i>Bunseki Kagaku</i> , 33: 561-563.
84TJI 01	P. S. Tjioe, K. Volkens, J. Kroon, J. de Goeij, and S. The (1984), Determination of Gold and Platinum Traces in Biological Materials as a Part of a Multielement Radiochemical Activation Analysis System, <i>International Journal of Environmental Analytical Chemistry</i> , 17: 13-24.
84TU 01	S.-D. Tu and K. H. Lieser (1984) Multielement Analysis of Chinese Biological Standard Reference Material by Monostandard Instrumental Neutron Activation Analysis, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 81: 345-352.
84TU 03	S.-D. Tu, W. Hanf, and K. H. Lieser (1984) Monostandard Instrumental Neutron Activation Analysis of Chinese Biological Standard Reference Material Using Short-lived Radionuclides, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 83: 283-290.
84URA 01	I. T. Urasa (1984) Determination of Arsenic, Boron, Carbon, Phosphorus, Selenium, and Silicon in Natural Waters by Direct Current Plasma Atomic Emission Spectrometry, <i>Analytical Chemistry</i> , 56: 904-908.
84VOS 01	L. Vos and R. van Grieken (1984) Preparation of Conducting Electrodes from Biological Samples for Multielement Trace Analysis by Spark-source Mass Spectrometry or Emission Spectrometry, <i>Analytica Chimica Acta</i> , 164: 83-90.
84WEB 01	H. T. Weber, J. van Willigen, and W. van der Linden (1984) Determination of Total Sulfur in Coal by X-ray Fluorescence Spectrometry, <i>Analytica Chimica Acta</i> , 160: 271-275.
84WOL 01	A. Wolf, P. Schramel, G. Lill, and H. Hohn (1984) Bestimmung von Spurenelementen in Moos- und Bodenproben zur Untersuchung der Eignung als Indikatoren für Umweltbelastungen, <i>Fresenius Zeitschrift für Analytische Chemie</i> , 317: 512-519.
84WOL 02	K. A. Wolnik, F. Fricke and C. M. Gaston (1984) Quality Assurance in the Elemental Analysis of Foods by Inductively Coupled Plasma Spectroscopy, <i>Spectrochimica Acta</i> , 39B: 649-655.
84XIA 01	S. Xiao-quan, N. Zhe-ming, and Z. Li (1984) Use of Arsenic Resonance Line of 197.2 nm and Matrix Modification for Determination of Arsenic in Environmental Samples by Graphite Furnace Atomic Absorption Spectrometry using Palladium as a Matrix Modifier, <i>Atomic Spectroscopy</i> , 5: 1-4.
84YAM 01	M. Yamamoto, Y. Yamamoto, and T. Yamashige (1984) Elimination of Metal Interferences in the Hydride Generation Atomic Absorption Spectrometry of Arsenic using Sodium Tetrahydroborate(III) Solution, <i>Analyst</i> , 109: 1461-1463.
84ZER 01	M. Zerezghi, K. C. Ng, and J. A. Caruso (1984) Simultaneous Multielement Determination by Inductively Coupled Plasma-Rapid Scanning Atomic Emission Spectrometry, <i>Analyst</i> , 109: 589-592.
84ZIC 01	Z. Zichao, M. Guogan, and L. Huaquin (1984) The Chronometric Age of the Sinian Cambrian Boundary in the Yangtze Platform, China, <i>Geological Magazine</i> , 121: 175-178.

CODE N	REFERENCE
84ZSO D1	I. M. Zsolnay, J. H. Brauer, and S. A. Sojka (1984) X-ray Fluorescence Determination of Trace Elements in Soil, <i>Analytica Chimica Acta</i> , 162: 423-426.
85ABD 01	M. Abdullah and H. Maraguchi (1985) Computer-controlled Graphite Cup Direct Insertion Device for Direct Analysis of Plant Samples by Inductively Coupled Plasma Atomic Emission Spectrometry, <i>Analytical Chemistry</i> , 57: 2059.
85ADE 01	S. B. Adelaju, A. M. Bond, and M. H. Briggs (1985) Multielement Determination in Biological Materials by Differential Pulse Voltammetry, <i>Analytical Chemistry</i> , 57: 1386-1390.
85ADE 02	S. B. Adelaju and A. M. Bond (1985) Influence of Laboratory Environment on the Precision and Accuracy of Trace Element Analysis, <i>Analytical Chemistry</i> , 57: 1728-1733.
85AKA 01	M. S. Akanni and V. O. Ogugbuaja (1985) Multielement Analysis of Nigerian Traditional (Black) Soaps <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 91: 395.
85AND 01	D. L. Anderson, Y. Sun, M. Failey, and W. Zoller (1985) Neutron-capture Prompt Gamma-ray Multielement Analysis of Twenty-two Geochemical Reference Standards, <i>Geostandards Newsletter</i> , 9: 219-228.
85AVA 01	L. Avaldi, C. Bui, and M. Milazzo (1985) The Problem of Irradiation and Detection Angles in Quantitative XRF Analysis, <i>X-ray Spectrometry</i> , 14: 159-163.
85BAR 01	U. Bartels (1985) Über die Anwendung von Ascorbinsäure und Thioglykolsäure zur Beseitigung der Störungen durch dreiwertiges Eisen bei der photometrischen Bestimmung von Aluminium mit Aluminon in Pflanzen, <i>Fresenius Zeitschrift für Analytische Chemie</i> , 320: 56-57.
85BEL D1	L. F. Bellido and B. de C. Arezzo (1985) Uranium and Thorium Determination in Brazilian Coals by Epithermal Neutron Activation Analysis, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 92: 151-158.
85BEM 01	H. Bem and D. E. Ryan (1985) Determination of Palladium in Different Samples by Neutron Activation after Selective Preconcentration with Alpha-benzildioxime, <i>Analytica Chimica Acta</i> , 169: 79-85.
85BOM 01	A. M. Bond and Y. Nagaoa (1985) Determination of Aluminium, Copper, Iron, and Manganese in Biological and Other Samples as 8-Quinolinol Complexes by High-Performance Liquid Chromatography with Electrochemical and Spectrophotometric Detection, <i>Analytica Chimica Acta</i> , 178: 197-208.
85BRE 01	S. W. Brewer and R. D. Sacks (1985) Preconcentration of Cadmium from Highly Acidic Saline Solutions and Direct Determination of Bismuth, Cadmium, Mercury, Antimony, Tin, and Thallium in Highly Acidic Solutions with Electrically Vaporized Thin Gold Film Atomic Emission Spectrometry, <i>Analytical Chemistry</i> , 57: 724-729.
85BRO 01	R. R. Brooks and S. D. Naidu (1985) The Determination of Gold in Vegetation by Electrothermal Atomic Absorption Spectrometry, <i>Analytica Chimica Acta</i> , 170: 325-329.

CODE N	REFERENCE	CODE N	REFERENCE
85BYE 01	R. Bye and W. Lund (1985) Determination of Selenium in Biological Samples by Electrothermal Preconcentration and Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 321: 483-484.	85DUM 02	R. Dumarey, P. Verbiest, and R. Dams (1985) Optimization of a Wet Digestion Method for the Determination of Mercury in Coal Samples by Cold Vapor Atomic Absorption, Bulletin des Societes Chimiques Belges, 94: 351-357.
85CAH 01	M. C. Cantone, N. Molho, and L. Pirola (1985) Cadmium and Titanium in Human Serum Determined by Proton Nuclear Activation, Journal of Radioanalytical and Nuclear Chemistry, 91: 197-203.	85DYB 01	R. Dybczynski, H. Maleszewska, and M. Wasik (1985) An Accurate Method for the Determination of Copper in Biological Materials by Neutron Activation Analysis and Extraction Chromatography, Journal of Radioanalytical and Nuclear Chemistry, 96: 187-200.
85CAR 01	E. E. Cary (1985) Electrothermal Atomic Absorption Spectroscopic Determination of Chromium in Plant Tissues: Interlaboratory Study, Journal of the Association of Official Analytical Chemists, 68: 495.	85ENG 01	E. E. Engleman, L. L. Jackson, and D. R. Norton (1985) Determination of Carbonate Carbon in Geological Materials by Coulometric Titration, Chemical Geology, 53: 125-128.
85CAR 02	J. Carroll, N. Miller-Ihli, J. Harnley, D. Littlejohn, J. Ottaway, and T. O'Haver (1985), Simultaneous Multielement Analysis by Continuum Source Atomic Absorption Spectrometry with Graphite Probe Electrothermal Atomisation, Analyst, 110: 1153-1158.	85EVA 01	W. H. Evans and J. I. Read (1985) Determination of Lithium, Rubidium, and Strontium in Foodstuffs, Analyst, 110: 619-623.
85CHA 01	C. C. Y. Chan (1985) Semiautomated Method for Determination of Selenium in Geological Materials using a Flow Injection Analysis Technique, Analytical Chemistry, 57: 1482-1485.	85EVA 02	W. H. Evans and D. Caughlin (1985) Evaluation of Methods for the Determination of Total Molybdenum and Vanadium in Foodstuffs Using Spectrophotometric Measurements, Analyst, 110: 681-687.
85CLA 01	E. Clayton and K. K. Woller (1985) Sample Preparation and System Calibration for Proton-Induced X-ray Emission Analysis of Hair from Occupationally Exposed Workers, Analytical Chemistry, 57: 1075-1079.	85FAB 01	J. L. Fabec and M. L. Ruschak (1985) Determination of Nickel, Vanadium, and Sulfur in Crudes and Heavy Crude Fractions by Inductively Coupled Argon Plasma Atomic Emission Spectrometry and Flame Atomic Absorption Spectrometry, Analytical Chemistry, 57: 1853-1863.
85CLA 02	E. Clayton and L. S. Dale (1985) Determination of Fluorine in NBS Coal and Coal Fly Ash by Proton Induced Gamma Ray Emission and Spark Source Mass Spectrometry, Analytical Letters, 18: 1533-1538.	85FAN 01	Y. Fang, G. Wu, and W. Fushen (1985) Zeeman Effect Electrothermal Atomic Absorption of Arsenic with Platinum as a Matrix Modifier, Analytical Letters, 18: 1245-1250.
85COE 01	W. Coerdt and E. Mainka (1985) Versuche zur Goldbestimmung in Boden- und Staubfilterproben, Fresenius Zeitschrift fur Analytische Chemie, 320: 656.	85FAS 01	A. J. Faske, K. Snable, A. Boorn, and R. Browner (1985) Microliter Sample Introduction for ICP-AES, Applied Spectroscopy, 39: 542-545.
85COE 02	P. P. Coetzee and K. H. Lieser (1985) Multielement Analysis by Energy-dispersive X-ray Fluorescence using a Single Calibration Procedure, Requiring One or Two Standards, Fresenius Zeitschrift fur Analytische Chemie, 322: 386-390.	85FAS 02	J. D. Fassett and H. M. Kingston (1985) Determination of Nanogram Quantities of Vanadium in Biological Material by Isotope Dilution Thermal Ionization Mass Spectrometry with Ion Counting Detection, Analytical Chemistry, 57: 2474-2478.
85COX 01	A. G. Cox, I. G. Cook, and C. W. McLeod (1985) Rapid Sequential Determination of Chromium (III) - Chromium (VI) by Flow Injection Analysis - Inductively Coupled Plasma Atomic Emission Spectrometry, Analyst, 110: 331-333.	85FEN 01	X. Feng and D. E. Ryan (1985) Neutron Activation Determination of Mercury in Waters after Preconcentration by Flotation of Dithizone-Mercury Complexes International Journal of Environmental Analytical Chemistry, 19: 272-280.
85CUT 01	G. A. Cutter (1985) Determination of Selenium Speciation in Biogenic Particles and Sediments, Analytical Chemistry, 57: 2951-2955.	85FIL 01	R. H. Filby, S. Nguyen, C. Grimm, G. Markowski, V. Ekambaram T. Tanaka, and L. Grossman (1985), Evaluation of Geochemical Standard Reference Materials for Microanalysis, Analytical Chemistry, 57: 551-555.
85DAT 01	A. R. Date and A. L. Gray (1985) Determination of Trace Elements in Geological Samples by Inductively Coupled Plasma Source Mass Spectrometry, Spectrochimica Acta, 40B: 115-122.	85FIL 02	R. H. Filby, G. van Berkel, A. Bragg, A. Joubert, W. Robinson, and C. Grimm (1985), Evaluation of Residual Fuel Oil Standard Reference Materials as Trace Element Standards, Journal of Radioanalytical and Nuclear Chemistry, 91: 361-368.
85DAV 01	L. A. Davis, R. J. Krupa, and J. D. Winefordner (1985) A Simple, Inexpensive Computer-controlled Slew-scan Atomic Fluorescence Flame Spectrometer for Multielement Determinations, Analytica Chimica Acta, 173: 51-62.	85FLO 01	M. A. Floyd, A. Halouma, R. Morrow, and R. Farrar (1985) Rapid Multielement Analysis of Water Samples by Sequential ICP-AES, American Laboratory, 17(3): 84-92.
85DOU 01	J. P. Dougherty, R. G. Michel, and W. Slavin (1985) Precision Considerations in the Determination of Manganese in Mouse Brains by Furnace Atomic Absorption with Zeeman Background Correction, Analytical Letters, 18: 1231-1244.	85FRI 01	C. Friedli, M. Rousseau, T. Diaco, and P. Lerch (1985) Dosage de traces de soufre et de beryllium par activation dans un faisceau d'oxygene-18, Analusis, 13: 176-180.

CODE N	REFERENCE	CODE N	REFERENCE
85FUD 01	N. Fudogawa and A. Kawase (1985) Determination of Cadmium in Coal by Metal Furnace Atomic Absorption Spectrometry, Bunseki Kagaku, 34: 233.	85ICH 01	S. Ichinoki and M. Yamazaki (1985) Simultaneous Determination of Nickel, Lead, Zinc, and Copper in Citrus Leaves and Rice Flour by Liquid Chromatography with Hexamethylenedithiocarbamate Extraction, Analytical Chemistry, 57: 2219-2222.
85GAU 04	M. A. Gautier, E. S. Gladney, and D. R. Perrin (1985) Quality Assurance for Health and Environmental Chemistry 1984, Los Alamos National Laboratory report LA-10508-MS.	85IKE 01	M. Ikeda (1985) Determination of Arsenic at the Picogram Level by Atomic Absorption Spectrophotometry With Miniaturized Suction-flow Hydride Generation, Analytica Chimica Acta, 167: 289-297.
85GEN 01	C. A. Gent and S. A. Wilson (1985) The Determination of Sulfur and Chlorine in Coals and Oil Shales using Ion Chromatography, Analytical Letters, 18: 729-740.	85ISS 01	R. A. Issac and W. C. Johnson (1985) Elemental Analysis of Plant Tissue by Plasma Emission Spectroscopy: Collaborative Study, Journal of the Association of Official Analytical Chemists, 68: 499-504.
85GLA 01	E. S. Gladney and N. W. Bower (1985) Determination of Elemental Composition of NBS 278 and NBS 688 via Neutron Activation and X-ray Fluorescence, Geostandards Newsletter, 9: 261-262.	85JAC 01	L. L. Jackson, E. E. Engleman, and J. L. Peard (1985) Determination of Total Sulfur in Lichens and Plants by Combustion-Infrared Analysis, Environmental Science and Technology, 19: 437-441.
85GLA 02	M. D. Glascock, W. Z. Tian, and W. D. Ehmann (1985) Utilization of a Boron Irradiation Vessel for NAA of Short Lived Radionuclides in Biological and Geological Materials, Journal of Radioanalytical and Nuclear Chemistry, 92: 379.	85JAI 01	D. D. Jaiswal, H. Dang, and C. Sunta (1985) Distribution of Thorium in Human Tissues, Journal of Radioanalytical and Nuclear Chemistry, 88: 225-229.
85GLA 03	E. S. Gladney, R. Raymond, and N. W. Bower (1985) Evaluation of the LECO SC-132 Sulfur Analyzer for the Determination of Sulfur in Coals and Peats, American Laboratory, 17(7): 34-38.	85JAR 02	I. Jarvis and K. E. Jarvis (1985) Rare-earth Element Geochemistry of Standard Sediments: A Study using Inductively Coupled Plasma Spectrometry, Chemical Geology, 53: 335-344.
85GLA 04	E. S. Gladney (1985) Determination of Uranium in GSJ, CRPG, and CCRMP Reference Samples by Delayed Neutron Assay, Geostandards Newsletter, 9: 275-276.	85JON 01	J. W. Jones and T. C. O'Haver (1985) Effects of pH and Digestion Conditions on Chelex 100 Separation of Trace Elements from Tissue Digests Prior to ICP-AES Determination, Spectrochimica Acta, 40B: 263-277.
85GLA 05	E. S. Gladney, D. B. Curtis, and D. R. Perrin (1985) Determination of Selected Rare Earth Elements in 37 International Geochemical Reference Materials by Instrumental Thermal Neutron Capture Prompt Gamma-ray Spectrometry, Geostandards Newsletter, 9: 25-30.	85JOS 01	S. R. Joshi (1985) Determination of Th-228, Th-230, and Th-232 in Sediments by Anion Exchange and Nuclear Spectrometry, Analytical Chemistry, 57: 1023-1026.
85GRE 01	R. C. Greaves, R. M. Barkley, and R. E. Sievers (1985) Rapid Sampling and Analysis of Volatile Constituents of Airborne Particulate Matter, Analytical Chemistry, 57: 2807.	85KAT 01	T. Katami, T. Hayakawa, M. Furukawa, and S. Shibata (1985) Spectrophotometric Determination of Cobalt in Pepperbush Leaves and Coal Fly Ashes Using 2-(2-Benzothiazolylazo)-5-dimethylaminobenzoic Acid, Analyst, 110: 399-401.
85GRE 02	J. D. Greenough, S. R. McCutcheon, and V. S. Papezik (1985) Petrology and Geochemistry of Cambrian Volcanic Rocks from the Avalon Zone in New Brunswick, Canadian Journal of Earth Sciences, 22: 881-892.	85KAT 02	M. Kato and K. Kudo (1985) Study on the Comparator Method using Substoichiometry, I. Principle, Journal of Radioanalytical and Nuclear Chemistry, 95: 55-62.
85HAN 01	S. Hanamura, B. Kirsch, and J. D. Winefordner (1985) Determination of Trace Levels of Water in Solid Samples by Evolved Gas Analysis/Helium Microwave Plasma Emission Spectrometry, Analytical Chemistry, 57: 9-13.	85KIM 01	M. M. Kimberly and D. C. Paschal (1985) Screening for Selected Toxic Elements in Urine by Sequential Scanning Inductively-coupled Plasma Emission Spectrometry, Analytica Chimica Acta, 174: 203-210.
85HAR 01	H. Haraguchi, M. Kurosawa, and Y. Iwata (1985) Simultaneous Multielement Analysis of Coals and Fly Ashes by Inductively Coupled Plasma Atomic Emission Spectrometry, Bunseki Kagaku, 34: 257.	85KOJ 01	I. Kojima, T. Uchida, C. Iida, and K. Goto (1985) Determination of the Absolute Mass of an Analyte by Flame Atomic Absorption Spectrometry with Discrete Nebulisation, Analyst, 110: 1161-1163.
85HAS 01	R. J. Haskell and J. C. Wright (1985) Determination of Rhenium at Ultratrace Levels by Selective Laser Excitation of Precipitates, Analytical Chemistry, 57: 332-336.	85KUM 01	T. Kumamaru, Y. Nitta, F. Nakata, and H. Matsuo (1985) Determination of Cadmium by Suction-flow Liquid-Liquid Extraction Combined with Inductively Coupled Plasma Atomic Emission Spectrometry, Analytica Chimica Acta, 174: 183-189.
85HEE 01	S. S. Q. Hee, T. J. Macdonald, and J. R. Boyle (1985) Effects of Acid Type and Concentration on the Determination of 34 Elements by Simultaneous Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 57: 1242.	85LAN 02	S. Landsberger, R. E. Jervis, and A. Balicki (1985) The Determination of Sulphur and Heavy Metals in Snow by Inductively Coupled Plasma Atomic Emission Spectrometry, International Journal of Environmental Analytical Chemistry, 19: 219-225.
85HOL 01	J. Holzbecher, A. Chatt, D. E. Ryan (1985) SLOWPOKE Epi-cadmium Neutron Flux in Activation Analysis of Trace Elements, Canadian Journal of Spectroscopy, 30: 67-72.		

CODE N	REFERENCE	CODE N	REFERENCE
85LEP 01 E. A. Lepel and J. C. Laul (1985)	Neutron Activation Analysis of NBS Oyster Tissue and IAEA Animal Bone, Proceedings of the 5th International Conference on Nuclear Methods in Environmental and Energy Research, Mayaguez, Puerto Rico.	85MAR 01 H. Naresaki (1985)	Determination of Traces of Arsenic and Selenium by Hydride Generation - Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 321: 464-466.
85LIE 02 T. Liese (1985)	Zur Bestimmung von Elementen in Pflanzen- und Bodenproben mittels ICP-AES, Fresenius Zeitschrift fur Analytische Chemie, 321: 37-44.	85MAR 02 D. A. Naranjit, B. Radziuk, J. Rylaradom, P. Larkins, and J. van Loon (1985), A Microcomputer-controlled Simultaneous Multielement Non-dispersive Atomic Fluorescence Spectrometer, Applied Spectroscopy, 39: 128-136.	
85LIN 01 P. C. Lindahl (1985)	Electrically Heated Quartz Cell and Holder for an Atomic Absorption Hydride Generation System, Atomic Spectrometry, 6: 123-124.	85MAR 03 H. Naresaki (1985)	Determination of Arsenic and Selenium in Fat Materials and Petroleum Products by Oxygen Bomb Combustion and Automated Atomic Absorption Spectrometry with Hydride Generation, Analytical Chemistry, 57: 2481-2486.
85LIN 02 P. C. Lindahl (1985)	Determination of Arsenic and Selenium in Coal by Hydride Generation/Atomic Absorption Spectrophotometry -- An Inter-laboratory Evaluation of a Proposed Standard Test Method, Argonne National Laboratory report ANL/ACL-85-3.	85NDI 01 C. L. Ndiokwere (1985)	The Dispersal of Arsenic, Chromium, and Copper from a Wood Treatment Factory, and Their Effect on Soil, Vegetation, and Crops, Int. Journal of Environmental Studies, 24: 231-234.
85LON 01 J. Long-zhu and N. Zhe-ming (1985)	Determination of Nickel in Urine and Other Biological Samples by Graphite Furnace Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 321: 72-76.	85NG 01 R. C. Ng, H. Kaiser, and B. Meddings (1985)	Low Power Torches for Organic Solvents in Inductively Coupled Plasma Emission Spectrometry, Spectrochimica Acta, 40B: 63-72.
85LYO 01 D. J. Lyons, K. P. Spann, and R. L. Roofayel (1985)	Determination of Total Calcium, Zinc, Manganese, Iron, Magnesium, and Phosphorus in Animal Feeds and Plant Material Using Inductively Coupled Plasma Emission Spectrometry, Analyst, 110: 955-957	85NIS 01 M. Nishikawa, Y. Ambe, and T. Mizoguchi (1985)	Evaporation Preconcentration of Trace Elements in Rainwater for Inductively Coupled Plasma Emission Spectrometry, Bunseki Kagaku, 34: 664.
85MAD 01 M. Madaro and A. Moaure (1985)	Instrumental Neutron Activation Analysis Results in an Intercomparison Campaign on Lake and River Sediments, Journal of Radioanalytical and Nuclear Chemistry, 90:129-136	85OKA 02 K. Okamoto and K. Fuwa (1985)	Mussel Tiabue Powder, A Certified Reference Material, Analyst, 110: 785-788.
85MAS 01 K. Masumoto and M. Yagi (1985)	Determination of Strontium in Biological Materials by Charged-Particle Activation Analysis using the Stable Isotope Dilution Method, Journal of Radioanalytical and Nuclear Chemistry, 91: 369-378.	85OTT 01 M. Otto, W. Wegscheider, and E. P. Lankmayr (1985)	Single- and Multi-channel Detection for Generalized Quantitative Analysis in Cases of Unresolved Chromatographic Peaks, Analytica Chimica Acta, 171: 13-31.
85MCC 02 D. L. McCurdy, M. D. Wichman, and R. C. Fry (1985)	Rapid Coal Analysis. Part II: Slurry Atomization DCP Emission Analysis of NBS Coal, Applied Spectroscopy, 39: 984-988.	85PAR 01 C. J. Park (1985)	A Feasibility Study of an ETV/ICP/MS System, Ph.D. Thesis, University of Toronto.
85MEY 02 A. Meyer and R. Neeb (1985)	Bestimmung von Cobalt und Nickel in einigen biologischen Matrices - Vergleich Chelat - Gas - Chromatographie und Adsorptions-Voltammetrie, Fresenius Zeitschrift fur Analytische Chemie, 321: 235-241.	85PEA 01 W. C. Pearce, D. Thornehill, and J. H. Marston (1985)	Multielement Analysis of Solutions of Coal Ash using Inductively Coupled Plasma Optical-emission Spectrometry, Analyst, 110: 625-629.
85MIS 01 U. C. Mishra and C. N. Shaikh (1985)	Determination of Trace Elements in Total Particulate Matter of Cigarette Smoke by Instrumental Neutron Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 89: 545-552.	85PEN 01 I. Penev, I. Kuleff, and R. Djingova (1985)	Simultaneous Activation Determination of Aluminium, Magnesium, and Silicon in Rocks, Glasses, and Pottery, Journal of Radioanalytical and Nuclear Chemistry, 96: 219.
85NAD 01 R. A. Nadkarni, R. B. Cornett, and R. L. Bredeweg (1985)	Evaluation of an Elemental Analyzer, American Laboratory, 17(2): 69-77.	85PIW 01 J. Piwnica, G. Kaiser, and G. Tolg (1985)	Determination of Selenium at ng/g and pg/g Levels by Hydride Generation Atomic Absorption Spectrometry, in Biotic Materials, Fresenius Zeitschrift fur Analytische Chemie, 321: 225-234.
85NAK 01 T. Nakahara and N. Kikui (1985)	Determination of Trace Concentrations of Selenium by Continuous Hydride Generation-Inductively Coupled Plasma Atomic Emission Spectrometry, Spectrochimica Acta, 40B: 21.	85POT 02 P. J. Potts, O. Thorpe, M. Isaacs, and N. Rodgers (1985)	Instrumental Neutron Activation Analysis of Fourteen Carbonate Reference Materials from the NBS and George Frederic Smith and Eleven Industrial Geological Samples from the Bureau of Analyzed Samples, Geostandards Newsletter, 9: 173-179.
		85POU 01 M. Pougnat, M. Orren, and L. Haraldsen (1985)	Determination of Beryllium and Lithium in Coal Ash by Inductively Coupled Plasma Atomic Emission Spectroscopy, Int. Journal of Environmental Analytical Chemistry, 21: 213.

CODE N	REFERENCE	CODE N	REFERENCE
85RIC 01	T. D. Rice (1985) Private Communication; taken from 85CLA 02.	85TAN D1	J. T. Tanner, J. Smith, G. Angyal, P. Defibaugh, M. Bueno, and M. Villalobos (1985), National Bureau of Standards Reference Materials as Organic Nutrient Standards: A Preliminary Study, <i>Journal of the Association of Official Analytical Chemists</i> , 68: 1084-1086.
85ROE D1	I. Roelandts, G. Robaye, G. Weber, and J. Delbrouck (1985) Determination of Fluorine in Eighty International Geochemical Reference Samples by Proton Induced Gamma Ray Emission Spectrometry, <i>Geostandards Newsletter</i> , 9: 191-197.	85TER D1	S. Terashima (1985) Determination of Tin in Geological Materials by Atomic Absorption Spectrometry, <i>Bulletin of the Geological Survey of Japan</i> , 36: 375-383.
85RUC 01	A. de Ruck and R. Dams (1985) Determination of Thallium in Environmental Samples by Activation Analysis with Fast Reactor Neutrons, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 94: 87-94.	85TIA 01	W. Tian and W. D. Ehmann (1985) Radiochemical Neutron Activation Analysis for Arsenic, Cadmium, Copper, and Molybdenum in Biological Matrices, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 89: 109.
85SAI D1	K. Saitoh and N. Suzuki (1985) High-Performance Liquid Chromatographic Determination of Nickel, Copper, and Zinc as their Tetraphenylporphine Chelates, <i>Analytica Chimica Acta</i> , 178: 169-177.	85UTO 01	M. Uto, Y. Itoh, and M. Sugawara (1985) Differential Pulse Polarographic Determination of Nickel(II) as Water-soluble Dithiocarbamate, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 321: 68-71.
85SAK 01	T. Sakai, S. Hanamura, and J. D. Winefordner (1985) Evolved-gas Zeeman Flame Atomic Absorption Spectrometry for the Determination of Arsenic Compounds, <i>Analytica Chimica Acta</i> , 170: 237-243.	85VEI 01	C. Veillion, S. Lewis, K. Patterson, W. Wolf, J. Harnly, J. Versieck, L. Vanballenberghe, R. Cornelis, and T. O'Haver (1985), Characterization of a Bovine Serum Reference Material for Major, Minor, and Trace Elements, <i>Analytical Chemistry</i> , 57: 2106-2109.
85SAL 01	C. D. Salisbury and W. Chan (1985) Simple Automated Wet Digestion of Animal Tissues for Determination of Seven Elements by Atomic Absorption Spectroscopy, <i>Journal of the Association of Official Analytical Chemists</i> , 68: 218-219.	85VOG 01	J. R. Vogt and S. C. Schlegel (1985) Elemental Determinations in NBS 1633A Fly Ash Standard Reference Material using INAA and PGNA, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 88: 379-387.
85SAT 01	K. Sato and M. Sakata (1985) Multielement Determination of Coal Ash by Inductively Coupled Plasma Atomic Emission Spectrometry, <i>Bunseki Kagaku</i> , 34: 275.	85VOS D1	L. Vos and R. Van Greiken (1985) Matrix Effects and Analysis of Biological Materials by Spark Source Mass Spectrometry, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 321: 32-36.
85SCH 01	W. Schindlmeier and K. Heumann (1985) Iodspurenbestimmung in Lebensmittelproben durch massenspektrometrische Isotopenverdunnungsanalyse, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 320: 745-748.	85WAH 01	S. Waheed, I. Fatima, A. Mannan, M. Chaudhary, and I. Qureshi (1985), Trace Element Concentration in Egg-yolk and Egg-white of Farm and Domestic Chicken Eggs, <i>Int. J. Environmental Analytical Chemistry</i> , 21: 333-344.
85SCI 01	Sciex Corporation (1985) Multielement Isotope Dilution Using the ELAN ICP/MS Elemental Analyzer, Sciex Application Note 00384E.	85WHI 01	D. Whitehead and J. E. Thomas (1985) Use of a Nebulizer in Pyrohydrolic Decomposition of Silicate Materials for Determination of Fluorine and Chlorine, <i>Analytical Chemistry</i> , 57: 2421-2423.
85SHI 01	J. Shida, M. Itoh, T. Ogata, and H. Kamada (1985) Characterization of Manganese in Coal by Electron Spin Resonance, <i>Bunseki Kagaku</i> , 34: 247.	85WHI 02	R. T. White and G. E. Douthit (1985) Use of Microwave Oven and Nitric Acid-Hydrogen Peroxide Digestion to Prepare Botanical Materials for Elemental Analysis by Inductively Coupled Argon Plasma Emission Spectrometry, <i>Journal of the Association of Official Analytical Chemists</i> , 68: 766-769.
85SHI 02	J. Shida, H. Suzuki, and S. Abe (1985) Spectrophotometric Determination of Boron in Plants after Separation as Trimethyl Borate by Microdiffusion, <i>Analytica Chimica Acta</i> , 169: 349-353.	85WOL 01	K. A. Wolnik, J. Rader, C. Gaston, and F. Fricke (1985) Development of Laboratory Control Samples for the ICP-ES Determination of Nutrient Elements in Rat Tissues, <i>Spectrochimica Acta</i> , 40B: 245-251.
85SIM 01	M. Simonoff, Y. Llabador, G. Simonoff, M. Boisseau, and M. Roudaut (1985), PIXE Determination of Calcium in Red Blood Cells, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 94: 297-31D.	85WOO 01	I. H. Woo, H. Nishiyama, Y. Hashimoto, and Y. K. Lee (1985) Determination of Selenium in Coal Using Graphite Furnace Atomic Absorption Spectrometry after Chemical Separation, <i>Bunseki Kagaku</i> , 34: 599.
85SUB D1	K. Subramanian, J. Meranger, C. Wan, and A. Corsini (1985) Preconcentration of Cadmium, Chromium, Copper, and Lead in Drinking Water on the Polyacrylic Ester Resin, XAD-7, <i>Int. J. Environmental Analytical Chemistry</i> , 19: 261-272.	85XIA 01	S. Xiao-quan, Y. Zhi-neng, and N. Zhe-ming (1985) Determination of Gallium in Sediment, Coal, Coal Fly Ash, and Botanical Samples by Graphite Furnace Atomic Absorption Spectrometry using Nickel Matrix Modification, <i>Analytical Chemistry</i> , 57: 857-861.
85SUN 01	J. X. Sun and R. E. Jervis (1985) Neutron Activation Analysis of 35 Elements in Chinese Standard Rocks (GSR) and Soils (GSS) Using the Slowpoke Reactor, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 89: 553-560.		

CODE N	REFERENCE
85XIA 02	S. Xiao-quan, W. Zhe-ming, and Y. Zhi-neng (1985) Determination of Indium in Minerals, River Sediments, and Coal Fly Ash by Electrothermal Atomic Absorption Spectrometry with Palladium as a Matrix Modifier, <i>Analytica Chimica Acta</i> , 171: 269-277.
85YAG 01	M. Yagi and K. Masumoto (1985) Stable-Isotope Dilution Activation Analysis for Special Samples in which the Self-shielding Effect is Negligible, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 90: 91-103
85YAM 01	M. Yamamoto, M. Yasuda, and Y. Yamamoto (1985) Hydride-Generation Atomic Absorption Spectrometry Coupled with Flow Injection Analysis, <i>Analytical Chemistry</i> , 57: 1382-1385.
85YAM 02	M. Yamamoto (1985) Rapid Dissolution of Plutonium in Soil by Fusion with Ammonium Hydrogen Sulfate followed by Plutonium Determination by Ion Exchange and Alpha Spectrometry, <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 90: 401-408.
85YAN 01	J. Y. Yang, C. L. Tseng, J. M. Lo, and M. H. Yang (1985) Determination of Traces of Lithium in Biological, Environmental, and Metal Samples by Neutron Activation Analysis, <i>Fresenius Zeitschrift fur Analytische Chemie</i> , 321: 141-145.
85ZAC 01	D. Zachmann (1985) Geochemistry of Boron in Concentrations and Host Rock of Emsian Age in the Rheinische Schiefergebirge, Federal Republic of Germany, <i>Chemical Geology</i> , 48: 213-229.
85ZHA 01	Y. K. Zhang, S. Hanamura, and J. D. Winefordner (1985) Evaluation of Microwave-induced Air-plasma as an Excitation Source, <i>Applied Spectroscopy</i> , 39: 226-230.
86BOW 01	N. W. Bower, E. S. Gladney, and R. W. Ferenbaugh (1986) A Critical Comparison of the X-ray Fluorescence and Combustion-Infrared Methods for the Determination of Sulfur in Biological Matrices, <i>Analyst</i> , 111: 105-106.
86CAH 01	R. A. Cahill and A. D. Autrey (1986) Organic Carbon Measurements of Biological Materials from a Large River Ecosystem: A Major Improvement over Indirect Estimates of Carbon Flow, in preparation.
86CHI 01	F. Chisela, D. Gawlik, and P. Bratter (1986) Instrumental Determination of some Trace Elements in Biological Materials by Epithermal and Thermal Neutron Activation Analysis, <i>Analyst</i> , 111: 405-410.
86ELS 01	H. N. Elsheimer (1986) Application of an Ion Selective Electrode Method to the Determination of Chloride in 41 International Geochemical Reference Materials, <i>Geostandards Newsletter</i> , In Press.
86FIS 01	L. B. Fischer (1986) Microwave Dissolution of Geologic Material: Application to Isotope Dilution Analysis, <i>Analytical Chemistry</i> , 58: 261-263
86GAU 01	M. A. Gautier, E. S. Gladney, and B. O'Malley (1986) Quality Assurance for Health and Environmental Chemistry: 1985, Los Alamos National Laboratory report, LA-10813-MS.
86GIA 01	R. D. Giauque, J. M. Jaklevic, and A. C. Thompson (1986) Trace Element Determination using Synchrotron Radiation, <i>Analytical Chemistry</i> , 58: 940-944.

CODE N	REFERENCE
86GLA 01	E. S. Gladney, S. R. Garcia, and J. S. Newlin (1986) Determination of Elemental Composition of NBS SRM Coals via Automated Neutron Activation Analysis, <i>Geostandards Newsletter</i> , 10: 77-80.
86GRE 01	R. R. Greenberg (1986) Elemental Characterization of the National Bureau of Standards Milk Powder Standard Reference Material by Instrumental and Radiochemical Neutron Activation Analysis, <i>Analytical Chemistry</i> , in press.
86KAN 01	Y. Kanai, N. Imai, and S. Terashima (1986) Determination of Uranium in Thirty-six Geological Reference Samples by Fluorimetry and Extractive Spectrophotometry, <i>Geostandards Newsletter</i> , 10: 73.
86KRA 01	B. Kratochvil, M. Duke, and D. Ng (1986) Evaluation of Homogeneity of a Certified Reference Material by Instrumental Neutron Activation Analysis, <i>Analytical Chemistry</i> , 58: 102-108.
86KRA 02	B. Kratochvil, N. Motkosky, M. Duke, and D. Ng (1986) Comparison of Instrumental Neutron Activation Analysis and Graphite Furnace Atomic Absorption Spectroscopy for the Determination of Trace Aluminium Concentration and Homogeneity in the Biological Reference Material TORT-1, <i>Analytical Chemistry</i> , submitted.
86SCI 01	Sciex Corporation (1986) Analysis of NBS SRM 1577a: Bovine Liver, Sciex Application Note 13586A.
86SCI 02	Sciex Corporation (1986) ICP/MS Analysis of NBS SRM 1633a: Coal Fly Ash, Sciex Application Note 13086A.
86TSU 01	M. Tsukada, K. Yamashita, K. Endo, and H. Nakahara (1986) Use of an Activatable Tracer for the Determination of Lanthanoid Elements in Biological and Environmental Standard Reference Material by Neutron Activation Analysis, <i>Analytical Chemistry</i> , in press.

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